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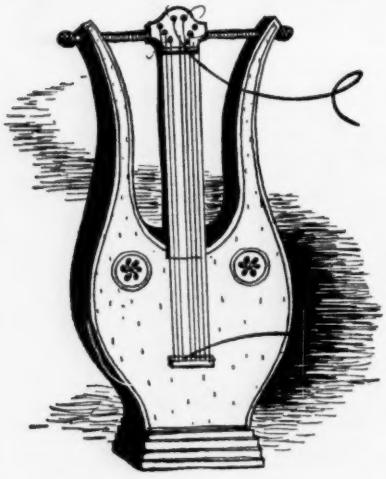

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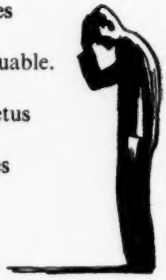

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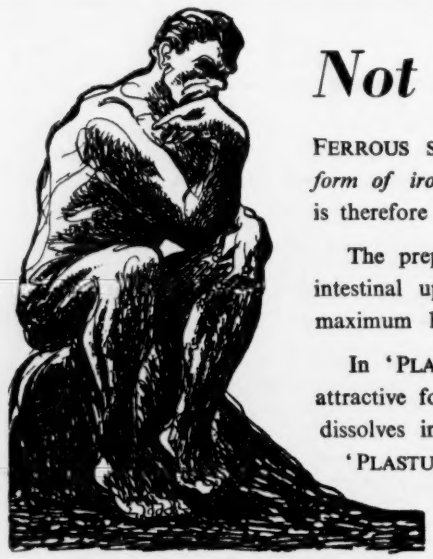

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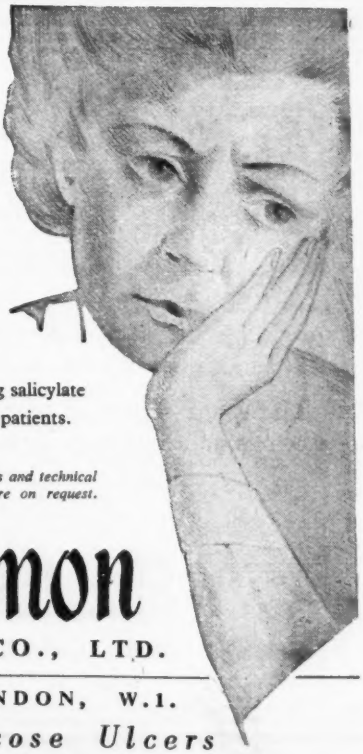

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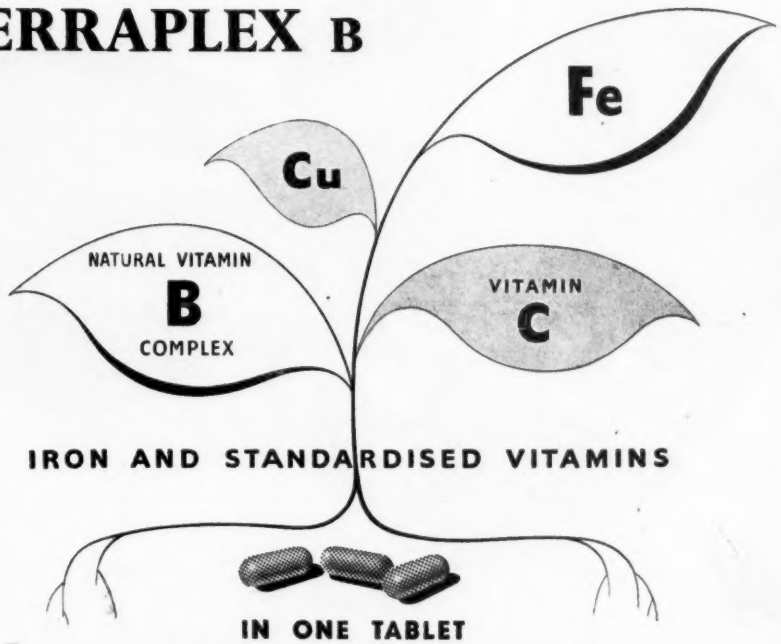

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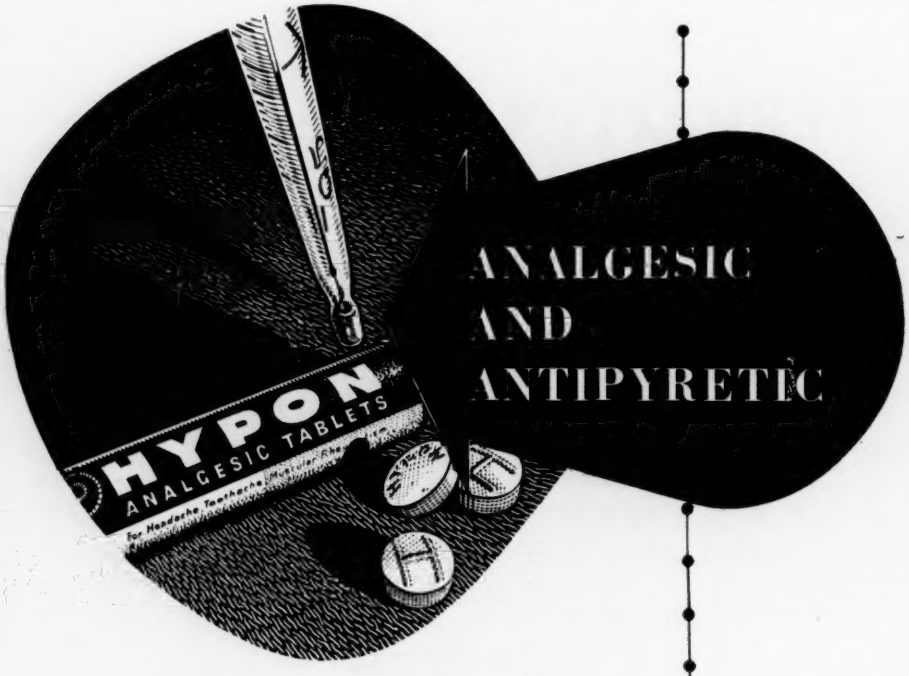

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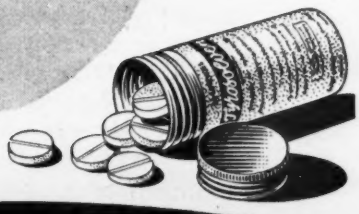
Tyrosolven lozenges are a most effective treatment for infections of the mouth and throat. The antibiotic tyrothricin has bactericidal and powerfully bacteriostatic actions; its spectrum includes haemolytic streptococci, enterococci, vibrioform and fusiform bacteria, and spirochaetes. Benzocaine, as a mild local anaesthetic, gives prompt relief from irritation and pain.
The economy of treatment with Tyrosolven lozenges is noteworthy, and they may be prescribed with confidence.



Tyrosolven lozenges are supplied to chemists in a dispensing pack of 250 lozenges at 16/8d.

Formula: Tyrothricin 1 mg., Benzocaine 5 mg.

Tyrosolven REGD.
ANTIBIOTIC — ANALGESIC
LOZENGES

NO WARNER PREPARATION HAS EVER BEEN ADVERTISED TO THE PUBLIC

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Introducing

DORMUPAX

AN IMPROVED BARBITURIC HYPNOTIC OF GOOD COMPATIBILITY AND WIDE THERAPEUTIC MARGIN

The House of Hommel have now made available for general distribution in this country 'DORMUPAX', a strong hypnotic agent whose high efficacy derives primarily from its inclusion of the *calcium salt of n-butyl-allyl-barbiturate*, presented for the first time in the new product.

FORMULA Each Tablet of 'Dormupax' contains

Calcium n-butyl-allyl-barbiturate	3.75 grains
Carbromalum B.P.C.	1.5 grains

PHARMACOLOGY Comparative experimental studies show that the therapeutic index of *n-butyl-allyl-barbituric acid* is superior to that of the majority of commonly used barbituric acid derivatives, i.e. of butyl, ethyl, isopropyl and phenyl structure. In animal studies the therapeutic index (DE/DL) is as low as 0.27. It has also been shown that the quotient DE/DL is even more favourable for the calcium salt than for the acid.

The molecule of *n-butyl-allyl-barbituric acid* reaches the sleep centre unchanged. After an average sleep duration of 8 hours, it is completely degraded to an indifferent form. The efficacy of 'Dormupax' is reinforced by carbromalum. The latter is a prompt, safe, medium strength hypnotic which is free from after-effects.

CLINICAL DATA 'Dormupax' has been thoroughly investigated in several mental asylums. Because the dosages are often much above the normal standard in these institutions, which comprise senile, disturbed or schizophrenic persons, the two most important factors for a hypnotic — efficacy and compatibility — could be examined in detail. The results were highly satisfactory. In cases of senile, motor-restless patients the efficacy was very good on dosage of half a tablet in the afternoon and one tablet in the evening. Disagreeable after-effects could not be observed.

Excited insane patients tolerate 4 tablets daily in a course of 2 to 4 days without any deleterious after-effects. For hypertonics the concurrent administration of 'Hyperysin'-Hommel proved to be very effective.

INDICATIONS Insomnia due to psychic causes or pain — Insomnia in cases of various diseases, especially circulatory diseases or arteriosclerosis — Spastic vascular states. In these cases the combination of 'Dormupax' and 'Hyperysin'-Hommel is indicated.

DOSAGE *Maximum daily single dose: 2 Tablets; maximum daily dose: 5 Tablets. Further information on dosage supplied in literature on request.*

PACKS: *Standard Tube of 12 Tablets; bottles of 250 (Dispensing). Samples of 'Dormupax' available on personally signed request of physicians only [Sch. IV] from the Medical Dept.*

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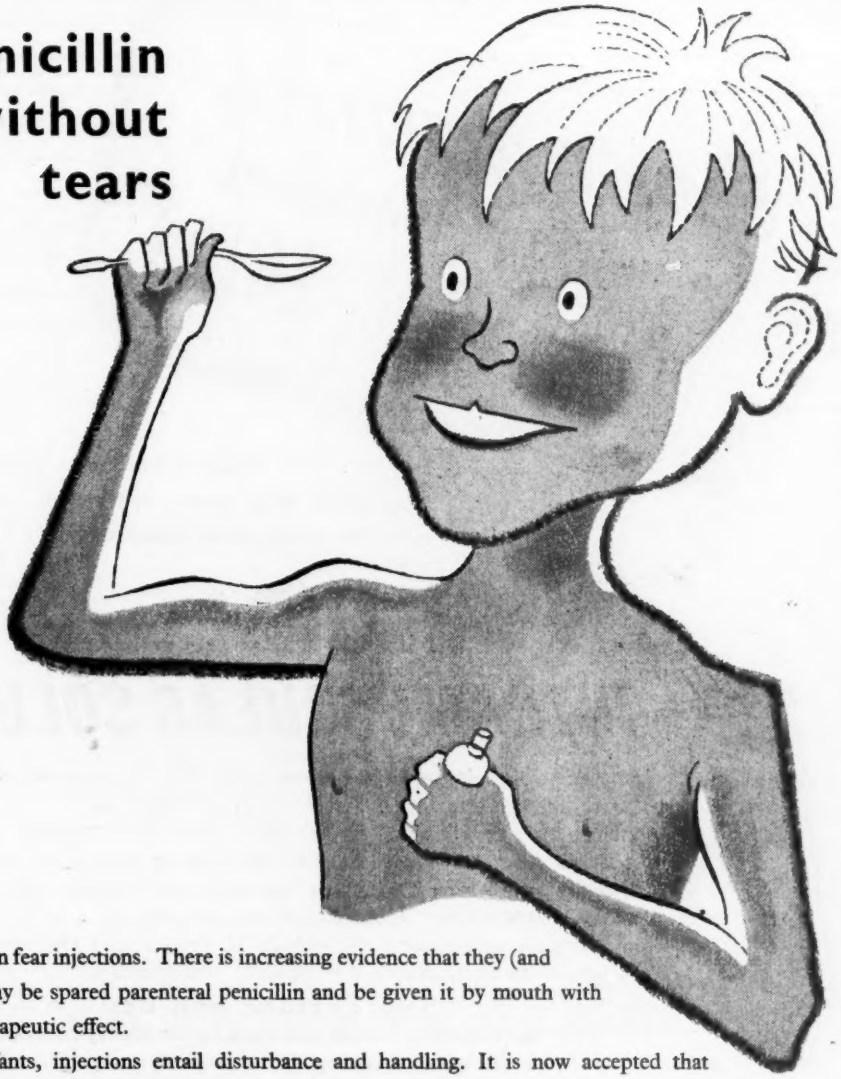
penicillin without tears



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50 + 100

the palatable *liquid* oral penicillin

'Eskacillin' is available in two strengths. 'Eskacillin' 50 containing 50,000 I.U. penicillin per medical teaspoonful; and 'Eskacillin' 100 containing 100,000 I.U. penicillin per medical teaspoonful.

Issued in 2 fl. oz. bottles.

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Riker Laboratories announce the introduction of a potent, reliable and convenient agent for reduction of blood-pressure:

VERILOID *

INTRAMUSCULAR SOLUTION

Containing Veriloid (brand of amorphous alkaloids of Veratrum viride), 1 mg. per cc. with 1% Procaine Hydrochloride in isotonic solution.
Prepared in ampoules of 2 cc., packaged in boxes of 6 ampoules.
A single dose of Veriloid Intramuscular Solution produces a reduction of arterial pressure averaging 25% of the manometric reading, the effect being maximal 60-90 minutes after injection and persisting for 3 to 6 hours. The injections are well-tolerated and virtually painless, so that blood-pressure may be kept continuously depressed by repeated administration.

INDICATIONS FOR USE

- **Hypertensive states accompanying cerebral vascular disease**
- **Malignant hypertension**
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Veriloid Intramuscular Solution may be used to maintain the hypotensive response produced by intravenous veratrum, or it may be employed as the primary hypotensive agent. It supplements the Veriloid dosage forms hitherto available, namely:—

Veriloid tablets (plain), Veriloid-VP tablets, Veriloid Intravenous Solution.

Detailed information gladly sent on request.

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Of high potency and low toxicity, 'Sulphamezathine' is particularly valuable in the treatment of pneumonia in the aged. High therapeutic blood levels are maintained with moderate dosage, and the drug is well tolerated, rarely giving rise to toxic side-effects. In the elderly patient, these factors ensure the maximum chance of successful recovery.

'SULPHAMEZATHINE'
SULPHADIMIDINE B.P. TRADE MARK

Available in the form of tablets (0.5 gramme); lozenges; oral suspension and powder; and as the sodium salt in sterile solution for parenteral administration.

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Amongst cases of leucorrhoea the incidence of trichomonal infection is so high, that, in the absence of other specific infection, directing therapy towards the eradication of the trichomonads appears to be justified even without seeking to demonstrate their presence microscopically.

'S.V.C.' brand acetarsol vaginal compound is effective in many cases of leucorrhoea which have failed to respond to other forms of treatment. As well as acetarsol — the protozoacidal power of which is well known — it contains a carbohydrate, which by promoting the growth of Döderlein's bacillus, helps to restore the normal *p*H of the vagina.

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Tablets : Containers of 25, 100 and 500
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Introducing

PERIHEMIN

IRON-B_{12}-C-FOLIC ACID-STOMACH-LIVER FRACTION

Lederle

PERIHEMIN* represents the greatest step forward yet made in the treatment of common anaemia, by means of a single form of medication. Already acknowledged the haematinic of choice in many hospitals in America, it is now introduced to physicians in the United Kingdom as a major therapeutic aid of proven merit in the iron-deficient and many megaloblastic anaemias.

PERIHEMIN combines the principal known haemopoietic substances in a well-balanced formula. An oral preparation, in capsule form, which provides maximum toleration and optimal dosage for the patient, it is invaluable in the treatment of nutritional hypochromic anaemia, post-infectious anaemia, the megaloblastic anaemias of pregnancy, infancy, pellagra and sprue, post-gastrectomy anaemia and allied dyscrasias.

DOSAGE *For severe megaloblastic anaemias, 3 capsules 3 times daily after meals. In other anaemias, 1 capsule 3 times daily after meals. In bottles of 100 and 1,000 capsules.*

*TRADE MARK

Literature and clinical samples on request.

FORMULA :—Each capsule contains : Ferrous Sulphate Exsiccated, 192.0 mg., Vitamin B_{12}, 10 micrograms, FOLVITE Folic Acid, 0.85 mg., Ascorbic Acid (C), 50.0 mg., Powdered Stomach, 100.0 mg., Insoluble Liver Fraction, 350.0 mg.

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For convenience in such circumstances, 'Distavone,' consisting of a balanced mixture of penicillin and dihydrostreptomycin in a highly purified form, has been made available.

Each single-dose injection-type vial contains 300,000 units procaine penicillin G, 100,000 units potassium penicillin G and 500,000 units (equivalent to 0.5 gramme pure base) dihydrostreptomycin sulphate. Boxes of 5 vials.

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In true migraine . . .

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administered parenterally, as early as possible in the attack, in a dosage of 1 mg. (1 ampoule), succeeds in aborting the attack before the onset of pain in approximately 90 per cent. of cases. If necessary, the injection may be repeated after half an hour. In mild cases, 20–30 drops of the oral solution may afford relief.

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OTHER INDICATIONS INCLUDE:—

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Full clinical information and samples available upon request.

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'Wellcome' BRAND

Whooping Cough Vaccine

Whooping cough vaccines prepared from cultures of *Hæmophilus pertussis* in liquid media (without addition of blood or serum) have for some time been widely used with excellent results in the United States, Canada and Sweden. Cohen and Wheeler's liquid culture medium has proved particularly satisfactory, giving vaccines of high antigenicity, and this medium is now used in the preparation of 'Wellcome' brand Whooping Cough Vaccine. The vaccine is prepared from selected smooth strains of *H. pertussis*, freeze-dried soon after isolation. It is not alum-precipitated, but is a plain or suspended vaccine, thus causing little or no reaction on injection. Each batch incorporates four to six strains of *H. pertussis* and is tested for antigenicity by the Kendrick intracerebral challenge method in mice.

The vaccine is issued in sets of 3 ampoules, each containing 1 c.c. (together sufficient for one immunising course), and in rubber-capped bottles containing 10 c.c.

'Wellcome' Whooping Cough Vaccine

BRAND

CONTAINING 20,000 MILLION *H. PERTUSSIS* PER C.C.

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Supplied by

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'PERNIVIT' for chilblains

Pernivit has proved to be remarkably effective both in treatment and in the subsequent prevention of chilblains. It utilises the vasodilator properties of nicotinic acid and the effect of vitamin K in maintaining normal blood coagulability and vascular permeability. Irritation and inflammation are quickly relieved.

Dosage is from two to six tablets daily according to the severity of the case. Pernivit is available in bottles of 50 tablets at 2/8. (Prices in Great Britain to the Medical Profession). Literature and specimen packings are available on request.

MEDICAL DEPARTMENT

THE BRITISH DRUG HOUSES LTD. LONDON N.I

Prvt/E/844

THE FUTURE OF MEDICAL RESEARCH*

Sir MACFARLANE BURNET

M.D. Melb., Sc.D. Camb., Ph.D. Lond., F.R.A.C.P., F.R.S.

DIRECTOR OF THE WALTER AND ELIZA HALL INSTITUTE OF MEDICAL RESEARCH, MELBOURNE

MEDICAL research is a very human activity carried out by men of diverse types who have entered and stayed in the field for a variety of reasons. It has a history and a continually changing approach to its material. Like the broader field of scientific research of which it is a part, it has developed its own sense of values and a conviction of its own intrinsic importance. These do not always coincide with the ideas of the community generally. It has grown out of human need, but its major contributions to human welfare have mostly come as by-products of its own intrinsic activity—an intrinsic activity which nowadays has almost lost contact with social need.

My object here is to consider in what directions medical research must develop if it is to be of maximal use to the community—having due regard to the fact that there is a well-defined cultural pattern of research which like any other established pattern of tradition and activity cannot be changed suddenly without dire consequences.

This puts the problem neatly into two halves. What does the community need from medical research? And how can the present pattern of research activity be more effectively directed toward those socially valuable ends?

The Aims of Medical Science

The aim of medicine in the broadest sense is *to provide for every human being, from conception to death, the greatest fullness of health and length of life* that is allowed by his genetic constitution and by the accidents of life.

We are all aware of the importance of preventive as well as curative medicine, and we are equally aware of how indefinite is the boundary between social amelioration and preventive medicine. A rising standard of living, and the spread of "upper class" demands for comfort and of "upper class" habits of cleanliness through the community, have been the most important factors in the vast increase in health and length of life that has taken place since the middle of last century. Florence Nightingale is perhaps the key figure of that change. Aristocratic, religious, neurotic, and with a terrifying capacity for work, she realised that the physical comforts of food, space, cleanliness, and good manners that were available to her own class were the important things lacking in the handling of the sick and wounded soldier or the sick pauper. Since then public health has always included an interest in housing and working conditions and all that complex of social philanthropy and regulation which in our day has flowered into the "Welfare State."

Medical research in any ordinary sense has had little or nothing to do with this social revolution, which, I should guess, has been responsible for at least half the improvement in the expectation of life that has taken place in the last hundred years. Florence Nightingale never believed in bacteriology, and, though in due course the bacteriologists found good reasons for the benefit obtained by improving drains and supplying pure water, the whole process was well under way before the scientists had any influence whatever in administrative circles.

I have perhaps unduly stressed this point because I feel that when we are considering the social aspects of medicine we have to recognise that health depends on more than a regard for the bodily well-being of the individual as such. To give a current example—if in India or China the rapid application of known techniques produced an immediate reduction of infantile and general mortality to a Western level, within ten years there would be an intolerable strain on the food resources of the world and famine in the countries concerned.

I suggest that we need to add an even broader concept of the rôle of medicine in the modern world. Out of the idea of public health there is growing the concept of human biology with its own central objective. Perhaps this can be stated as simply to find means *to ensure the indefinite continuance of the human species at a level of physical and mental health not inferior to that of the present.* It is perhaps characteristic of the present time that we have reduced our aspirations for the future to such a negative statement. But I think we are realising every year the complexity and the difficulty of accomplishing the task that I have stated. Its implications go into every phase of human life—politics and economics even more than medicine. But here I shall try to confine myself to aspects bearing directly on the bodily health of human beings, including mental and social factors only in so far as they affect the body.

Our modified definition of the aim of medical science, then, is to provide for all human beings the greatest possible health and length of life and to ensure that the possibility of providing those benefits shall not diminish from generation to generation.

The Changing Problems of Medicine

A hundred years ago the major causes of premature death resulted from infectious disease and malnutrition, especially in infancy and childhood. Infantile mortality in London then was near 300 per 1000 live births. Improper food and infectious disease of one sort or another were mainly responsible.

Infectious disease will always be with us, and there will always be room for further refinement in prevention and treatment; but as a major cause of death in the years of youth and maturity it is becoming relatively unimportant. Similarly the knowledge we have of the fundamentals of nutrition is such that the problems in that field are wholly educational and economic. Scurvy and rickets are virtually unknown in Australia where our only important nutritional disease, tooth decay, is due not to a food deficiency but to excess of a luxury.

Though it may seem an inappropriate remark for one whose whole professional life has been concerned with infectious disease, I believe that, provided the established mechanism of preventive medicine, medical care, and drug production continued to function, fundamental work on the nature of micro-organisms and on the diseases they produce could stop today without influencing the current process by which all the main infectious diseases except poliomyelitis are disappearing. This is of course an over-statement: as long as the human race exists there will be long-term changes and sudden new episodes of infectious disease that will need intelligent investigation and appropriate action to counter them. My point is only that it is extremely unlikely that any new principles will be needed to maintain our present very effective control of infectious disease: in that sense fundamental research is not called for by an expressed human need. I can leave you to make precisely the same sort of qualification about nutritional disease.

Apart from the disappearance of infectious disease and gross malnutrition, the main changes in the medical scene in the last hundred years have been the provision of means for minimising physical or functional defects of the body, whether congenital or acquired.

Spectacles, false teeth, and hearing-aids may be slightly comic, but they have probably done more for human happiness than any other application of medical science.

* From a lecture given before the Actuarial Society of Australasia at Melbourne on Sept. 11, 1952.

Orthopædic and manipulative surgery, including such things as the repair of hernias, the treatment of hæmorrhoids, and the various ways in which a gynæcologist can rescue a middle-aged woman from chronic invalidism—all these have been of incalculable benefit. In much the same category are the developments in traumatic and plastic surgery which made it possible to say in 1945 that any wounded soldier reaching hospital alive had an 80% chance of survival and almost as good a chance of being capable eventually of earning his own living.

On the medical side the change is not so striking, but our maintenance therapies—insulin for diabetes, liver or B_{12} for pernicious anæmia—are in a sense analogous to the surgical or prosthetic triumphs I have mentioned.

In the whole application of surgery to human disease and disability there have been four great discoveries: anæsthesia, aseptic technique, blood-transfusion, and antibiotic control of infection from within. The art of the surgeon is to use his knowledge, his ingenuity, and his craftsman's skill to apply these discoveries to each individual problem. There is infinite scope for improvement in methods of cutting and manipulating body tissues with the safety made possible by the four great discoveries, but for the most part what is needed is men to make the best use of what is available rather than to find new approaches. In regard to surgery I believe that there is perhaps one important field still to be fully explored—namely, means of dealing with the complex functional conditions which cause death from shock. Otherwise the whole field is one for clinical rather than fundamental research.

The Gaps in the Present-day Picture

The great advances in the hundred years, then, are the virtual elimination of infectious disease and malnutrition as major causes of death; the provision of prosthetic or surgical help for bodily defects; effective surgical treatment of traumatic, mechanical, or infective emergencies; and a wide variety of symptomatic remedies, particularly means of diminishing pain. Two important types of maintenance therapy to make good a gradually developing genetic weakness have been successful in diabetes and pernicious anæmia, while a third type is or may be emerging in the treatment of rheumatoid arthritis with cortisone.

What are the major medical problems which have not been effectively dealt with? The first and most important is of course insanity and feeble-mindedness; probably the next is functional disease of the nervous system, with its manifestations in the psychoneuroses and psychosomatic disorders. It would be in line with modern thought to add that crime, delinquency, and general bad manners are hardly distinguishable from the medical manifestations.

We may look at the matter from two points of view: (1) the major remaining causes of untimely death (i.e., of persons dying under 60 years of age); and (2) the main reasons for individuals being incapable of normal economic activity.

In the first group we have:

(*a*) *Death of infants* in the first month of life from various forms of congenital malformation or disability.

(*b*) *Death from cardiovascular inefficiency* of one sort or another, with coronary disease taking an increasingly important part.

(*c*) *Cancer*, the incidence of which increases steadily with age but is still of great importance under 60 years.

(*d*) *Death from violence*, especially automobile accidents.

Many of these will also be responsible for a more or less prolonged period of social dependence before death ensues, especially cancer and a variety of cardiovascular conditions. In civilised countries of Western European origin the major causes of disability for which there are no clearly defined preventive or curative procedures are:

(1) Manifestations of *genetic anomaly*, of which pernicious anæmia and diabetes almost certainly are examples. As I shall point out later, this group may include in part at least almost every human disability.

(2) *Psychogenic disorders*—i.e., disease caused or precipitated by emotional factors. On the one hand we have disorders of behaviour and personality, on the other the so-called psychosomatic diseases—conditions in which by one mechanism or another the emotional difficulty leads to physical lesions that may range from backache and skin complaints to essential hypertension, exophthalmic goitre, and peptic ulcer.

(3) *Allergic disturbances*, representing essentially a distortion of the immunity mechanism. Rheumatic fever and probably rheumatoid arthritis, nephritis, and some forms of asthma, may be related to bacteria as the sensitising antigens. A multiform assemblage of troubles—hay-fever, asthma, and many types of skin lesion—may be associated with non-bacterial sensitisers.

(4) There remain many conditions where it is impossible to say that any single cause is responsible—gall-stones and kidney stones, obesity, chronic bronchitis, varicose veins, and many others.

In general, therefore, methods are well developed for dealing appropriately with the impact of tangible environmental agencies on the body—micro-organismal infection, trauma, poisonings. These are things which are easy to understand, which can be reproduced in animals, and which have provoked the combination of laboratory work and clinical ingenuity that has been responsible for most of our successes in medicine.

Where we are at a loss is to assess and compensate for the influence of factors intrinsic to the patient. Every human being who is not one of a pair of identical twins is uniquely different from every other human being. Probably every single one of us has genetic characters which he would be healthier without. And every doctor will agree that in one way or another the patient's "constitution" is concerned in his every illness. Also intrinsic to the individual in the sense I am using the word is his emotional attitude toward his environment. A man's temperament is probably very largely inborn, but at any given point in his life it is what his life's experience has made of his inherited make-up. There is no doubt that many diseases are psychogenic in origin—i.e., they would not have occurred if the patient had not been exposed to worry, frustration, and other non-material impacts of the environment. Equally we can feel certain that there are people whose inheritance is such that no conceivable amount of frustration or fear would induce peptic ulcer or chronic colitis. Finally we have to recognise that death *is* a necessary end—a universal evolutionary necessity—and to die is as much part of our inheritance as to cease growing at 18 or 20. The healthiest of men finds his tissues hardening and failing as he passes 70, and in one place or another the final breakdown will come eventually. The rate of senile degeneration in different tissues will vary from person to person, presumably mainly for genetic reasons.

From this point of view, once we get away from the extrinsic causes of disease and disability we face a vastly more difficult problem. The patient presents us with a disease condition whose nature is determined (1) by certain aspects of his genetic constitution, (2) by his past experience, which may well include a sequence of low-grade impacts from the environment, and (3) by psychosomatic components, which in one form or another will always be there.

In contrast to the "extrinsic" disabilities, these are complex and difficult to understand—they can be reproduced in animals only in rather crudely and distantly analogous forms—and at the present time there is virtually nothing we can do to prevent their occurrence. There is no short cut to their understanding via the laboratory bench; they can be tackled only by the direct study of the human material. But these are the problems

that medical research must face in the future—and we may have to make a considerable reorientation of our ideas of medical research to do so.

The Pattern of Medical Research Today

I would hold that science springs from the same root as craftsmanship and art, and I should define science very simply as the systematisation of methods for the most effective satisfaction of human desires. But with the development of research and scholarship as a professional occupation, science has become a pattern of intellectual techniques and judgments of values, with a hierarchy of prestige and a subtly graded system of rewards. In many ways the modern community of scientists has as definite a social structure as the medical profession or the Protestant clergy. It is a structure that is well adapted to the functioning of those who compose it. I doubt if there is any other human activity in which rewards are so closely related to the value of the work done, or in which the typical and most sought after reward is the opportunity to do more and better work.

All scientific activity springs from the drive to satisfy human needs and desires, but in finding the most effective means of doing so scientists have become on the whole more interested in the means than in the end. To do a thing properly demands an understanding and control of many relevant factors, each of which in turn depends on others. Any experimental scientist of imagination and intelligence can start with any problem whatsoever, and by following where it leads spend a lifetime in meritorious scientific work. There is a tradition well founded in experience that important advance in practical as well as in theoretical science comes not from the direct attempt to cater for some practical need but by working at the advancing edge of knowledge. Very often nowadays the procedure is to apply to the advancing edge of one field, ideas or techniques that have been developed in a different field.

Being an academically minded scientist myself, I know that the typical research man is happiest when he has all the materials for his experiments or observations immediately under control. It is much more gratifying to study epidemics in mice, where everything from the strain of virus to the diet of the mice is known, than to try to make sense of a human epidemic, where all the factors are intrinsically complex and are made worse by health departments taking all sorts of action to stop it.

There are of course many people engaged in applied research in industry, agriculture, medicine, and sociology; but it is inescapable that in the cultural pattern of scientific activity this ranks lower than "pure" science. I am making no personal value-judgment here: I am merely reporting the fact that in scientific circles generally it is the development of ideas and generalisations on a basis of sound experimental work that gives status, not the production of life-saving drugs or money-spinning inventions. Take the recent presidents of the Royal Society—Rutherford, Bragg, Robinson, Sherrington, Dale, Adrian, a wonderful sequence of names—men who have influenced enormously the development of knowledge and in many indirect ways the practical life of the community. But none of them have produced by their own work discoveries or techniques that were immediately valuable to industry or medicine.

The academic point of view might be expressed in its extreme form by saying that scientific research is an activity of value for its own sake, and that, provided the project is attacked by the accepted methods of experimentation and logic, the actual material investigated is quite unimportant—so long as it is of such a nature as to uncover ideas and generalisations applicable to more than the situation actually studied. A good example is Sonneborn's studies of the genetics of the protozoon paramoecium. Paramoecium has no conceivable "useful" interest to human beings. It has a faint resemblance to some pathogenic forms, but that is all. Nevertheless we academic biologists all agree that this work of Sonneborn's is of first-rate theoretical importance. This is the type of value-judgment that runs through scientific work today, and which has become an integral part of the pattern of science.

In practice most fields of scientific study are chosen with some regard to the possible human implications of the work. For fundamental studies of how viruses multiply in cells I feel happier in using the virus of human influenza than I would in using a virus acting on some common bacterium. But the general approach to the problems, and the satisfaction of discovery when it came, would be precisely similar in the two cases.

What I want to stress is that one cannot present a scientist or group of scientists with an important human problem—let us say the cause of breast cancer—and expect a straightforward advance to an acceptable answer. What is allowable is to ask that an investigation be undertaken in some field which in the light of current knowledge seems relevant to the human problem. There is, for instance, much current interest in Bittner's ideas about a virus-like agent being responsible for breast cancer in mice. It would be reasonable to apply the mouse techniques to a series of cases of human cancer, or to study the interaction in mice of the "virus" factor with such things as age of infection or influence of hormones. For progress to occur we are almost compelled to have a number of individuals or groups working on the problem in different parts of the world and cross-stimulating one another with their different approaches.

Even a very young scientist knows nowadays that the chances of his discovering something equivalent to penicillin, nuclear fission, or the cause of cancer are vanishingly small; but he also knows that if his intelligence, curiosity, pertinacity, and imagination are up to the necessary standard there is a well-defined path by which he can make a continuing series of contributions to knowledge and in the process gain prestige and reasonable economic security. He will be disinclined at any stage to step off that moving staircase and adopt an attitude to science out of line with the current tradition.

I am not saying that this is a good thing: I think in fact that in many ways it draws some of our best brains away from the fields where they could make their best contribution to human welfare. There must be many first-rate academic scientists who if their interests lay that way could make a far more effective contribution in industry or practical medicine. But it does represent the pattern of today's high-grade scientific activity. And it must be remembered in any attempt to mould research activity toward what the community or any influential section of it feels is needed. Every major applied research organisation finds that if it is to keep its best men these must have opportunity for the fundamental work that brings them satisfaction and prestige of the sort they cherish. Experience suggests that a first-rate man is more useful if he is contented, even if he is in fact not primarily interested in the job that he is paid for.

All that this adds up to is that it would be quite foolish to lay down even the most enlightened programme for medical (or any other type of scientific) research and expect it to be carried out in that form. Sometimes under stress of urgent need a man will find the drive to go straight ahead for a definite and limited objective, but that is by no means the usual approach.

Current Activity in Medical Research

Once medical research was almost synonymous in the lay mind with bacteriology; and certainly it is in the field of infectious disease that laboratory research has had its main practical triumphs.

At the medical level most bacteriology today is almost confined to the great commercial drug houses, which alone have the resources to undertake the systematic and effective study of the thousands of possible compounds that might be used therapeutically. Microbiology is a flourishing science in the universities and research institutes, but except to a limited extent it has almost wholly deserted the medical field. The most flourishing aspect of bacteriology is what is called microbial genetics, and though this is throwing much light on the basic processes of life, its bearing on the treatment and prevention of disease is almost nil. Those of us in the virus field have rather more responsibility from two points of view. First, viruses are rather liable to flare up into sudden unexpected epidemics large or small. Our Australian encephalitis epidemic in early 1951 was an example on a small scale, and the 1918-19 pandemic of influenza on a world-wide one. The second justification is that a study of the interaction of virus and cell may throw light on the cancer process. Cancer is certainly not a virus disease in any reasonable sense, but there *are* virus-like agents associated with some types of cancer. I have often said that a virus is the most subtle probe we have with which to explore the interior of the cell. When we know a lot more about the interior of the cell we may find an effective clue to the processes which turn a normal into a cancerous cell—or we may not.

That leads me to cancer research. On the one hand we have every variety of study into cell processes of a wide range of organisms—any one of them *may* add a contribution of value to cancer work, but 99% or more will certainly not do so. On another angle we see the attempt to find agents which will selectively damage or kill cancer cells but leave normal cells unaffected. Radiations (X ray, radium, and artificial radioactive isotopes), a variety of poisons like nitrogen-mustard gas and chemically distorted nutrients, and viruses "trained" to attack cancer cells only—these are the three main lines of research today. I am not in very close touch with cancer work, but I am much impressed by the difficulty of the problem and I feel rather pessimistic about the prospects of gaining any significant influence over the mortality of cancer for many years to come. I might guess that the most useful way to diminish cancer incidence would be to close the cigarette factories.

There is not likely to be any great change from the present rule that the best hope in cancer is early diagnosis and appropriate treatment by surgery and/or radiation therapy.

In the field of what we may call metabolic diseases—i.e., such maladies as diabetes, pernicious anæmia, and rheumatoid arthritis—there is great activity in the application of known methods to the clinical problems that arise. But there is little likelihood of major changes of approach, and even smaller likelihood that there are other major diseases in which hormonal deficiencies of this general type are concerned. Though we deal, or attempt to deal, with these diseases on physiological and biochemical principles, their origin is almost certainly genetic. Future developments in their understanding, though not necessarily in their control, will come when the genetic approach is properly exploited.

I wish that I could say something hopeful about research into disease of the nervous system, whether its manifestations are physical or mental. With some minor reservations the position today is much the same as it was in my student days when every patient with a physical disorder of the nervous system was given antisyphilitic treatment. The basis was simply that if the disorder was due to syphilis it might be cured; if not, it was certainly incurable. There is admittedly much being done at an empirical level in treating mental disease by the very crude procedures of leucotomy or the electrical or toxic shock treatment. Both procedures have their uses but they are obviously only rough transitional approaches to problems of almost insuperable difficulty.

In the laboratories there is great activity in the study of the nervous system, and most physiologists nowadays are electrophysiologists. The immense commercial development of electronic equipment in recent years has provided gadgets of infinite adaptability for the measurement of electrical changes in nervous tissues. Any ingenious experimenter can find an infinity of problems to study. He can also take pride in the way his science is joining hands with that of the makers of "electronic brains" and introducing "cybernetics" to the philosophers. It is magnificent, but it has no bearing whatever on the pressing problems of insanity, behaviour disorders, and feeblemindedness. Probably every scientist has felt at times that most other scientists are guilty of the sin of infinite and futile elaboration. I am afraid I feel that way about electrophysiology; but I must also admit that from the president of the Royal Society downwards electrophysiologists have the highest status today in the scientific world.

I am not competent to discuss psychological and psychiatric research. Like most scientists outside that special field, I find it impossible to digest what of the psychological literature there is time to read. As a biologist I fancy that the effective generalisations that are needed may eventually be found more readily from the study of animal behaviour than from too undivided an attention on the human being.

We can be sure that, while civilisation persists, research on all these aspects of medicine, from infectious disease to psychiatry, will go on. They will change their character mainly in response to the discovery and utilisation of new techniques.

But all the work that I have discussed is from one point of view at a superficial level. It has been concerned only with the body and mind as we find them. It is of the essence of all the problems that body and mind have arisen by a process of evolution. In the broadest sense genetics can be defined as the science concerned with the transfer of pattern from one generation to another, pattern of bodily structure, pattern of behaviour, and in humans and domesticated animals pattern of disease. I turn therefore to what I feel will be the important topic of medical research for the future, human genetics.

The Central Place of Genetics in Modern Biology

There has been a general attitude of defeatism in regard to medical genetics. Every doctor will admit that inheritance plays a part in every illness; but as there is nothing that can be done to alter it he will usually feel that there is no sense in attempting to study the genetic aspects of the illness more closely. This is a perfectly justifiable attitude to the clinical problems of today—but not, I think, a correct one.

Let us begin by considering the main types of genetic study now going on.

We all know that the inheritance of all human characteristics is determined by the sorting out of chromosomes that takes place when germ cells mature and then fuse in the process of fertilisation. There is great activity in the study of problems of this sort in plants and animals. For historical and accidental reasons a large amount of the theoretical research has been done on two organisms—one a little fruit fly, drosophila, the other an important food plant, maize. Most of the agriculturally important plants and animals have been and are being studied genetically with both theoretical and practical aspects in mind. The most important commercial application has been the development of hybrid corn in the United States. In most types of stockbreeding theoretical genetics has been helpful in rationalising

empirical procedures, but in general has not greatly modified breeding techniques.

In recent years, however, genetics has become concerned with wider fields than those of normal inheritance in animals and plants. There are three new subsciences —population genetics, biochemical genetics, and microbial genetics—all likely to have very great influence *on* the future as well as in the future. Population genetics is concerned essentially with the mechanism of evolution —how selective survival acts on populations of known genetic structure to produce the sort of changes seen in evolutionary series. When we discuss such matters as how the intelligence quotient of children is negatively correlated with the number of other children in the family and why as a result the average intelligence quotient in the British Isles is probably falling by 1·6 points per generation we are dealing with a problem in population genetics. When we go to the mental hospitals and find a group of congenital aments who are such simply because of the genetic absence of an enzyme (phenylpyruvic oxidase) in their cells we are in the realm of biochemical genetics. This may well emerge as the master biological science of the future. In the last analysis all the changes produced by genes are expressed through a series of chemical reactions, and there is a growing belief that in some way each gene controls no more and no less than a single type of enzymic action. If the generalisation "one gene—one enzyme" is finally established, it will represent one of those great simplifying concepts like the idea of evolution by natural selection or the quantum theory. How far it will have practical bearing on medical or social aspects of human life may be problematical, but it will I think bear importantly on the growing industrial fields of microbiological chemistry. Most of the activity in the third offshoot from classical genetics—microbial genetics—is at a biochemical level. The microbe is the most versatile of synthetic chemists and by genetic study we can often learn much about the steps by which a given synthesis is made. Few people are aware that the commercial production of penicillin only became really practicable when the microbial geneticists sorted out a high-producing variant of the mould. There are infinite practical possibilities for the organic chemist in this field of study. Microbial genetics is not all chemical. At the present time there is a group of workers in my laboratory who have shown that influenza viruses can be in a sense hybridised—a phenomenon which is going to throw much light on how the virus multiplies in the cell it infects.

Human Genetics

However my real concern is with human genetics. There is already one branch of medicine that is paying tremendous attention to genetics in its bearing on what even the laity knows as "Rh babies." The inheritance and significance of the blood-groups is a fascinating subject that interests the anthropologist, the surgeon, and the obstetrician almost equally. The understanding and control of hæmolytic anæmia of the newborn is the most important practical application of human genetics today.

There are, however, very much more important potential applications of the genetic approach to human medicine. Perhaps the best way to introduce these potentialities is to say something about inheritance in relation to tuberculosis. For at least two hundred years doctors and laymen knew that there was an inheritable predisposition to tuberculosis, but the belief was only converted into a firm quantitatively based statement of fact in 1946.

Kallmann and Reisner went through the records of New York State tuberculosis organisation to find all persons reported as tuberculous who had a twin. These reported individuals were the "index twins." Their "co-twins" were sought out and along with other members of their families were studied in regard to tuberculosis. The results give a very interesting indication of the relative importance of inheritance and environment, of nature and nurture.

No-one will get tuberculosis unless he is infected with the tubercle bacillus, but if, as in New York State, a 90% level of infection is reached by the time of early adult life, other factors are obviously of great importance. If they were environmental (nutrition, housing, parental care, for example) they should be similar within each family. We should therefore expect siblings, whether they were twins or not, to show approximately similar incidence of tuberculosis. On the other hand, if inheritance is of high importance, we should expect a correspondingly high proportion of identical co-twins of people with known tuberculosis also to have the disease while non-identical co-twins and non-twin siblings should have a much lower incidence.

Now Kallmann and Reisner obtained the following figures for relations of the index twins with tuberculosis:

Identical co-twins	87%
Non-identical co-twins	25·6%
Other siblings	25·5%
Marriage partners	7·1%

In addition it was found that identical twins very frequently showed marked resemblances in the type and intensity of the disease.

This work leaves us in no doubt as to the importance of genetic factors in tuberculosis. It is so important, in fact, that we could say that in a modern civilised environment it is possible to eliminate tuberculosis in two ways. We may (and I think we shall) get rid of the tubercle bacillus, or we could eliminate genes for susceptibility to tuberculosis by selective breeding.

In tuberculosis we have three alternatives for control —prevention by public-health measures, cure of established disease, and genetic elimination of susceptibles. We are all rightly convinced that the first of these is the most important; but, if neither the first nor the second was possible, should we be justified in neglecting the genetic approach? The question takes on very much the same form when we think of the great variety of human disease and disability not due to microbes, poisons, or trauma, and susceptible only to symptomatic treatment. To what extent are these conditions genetic in origin, and should we begin to think about their control by genetic means?

The twin-study method is capable of supplying the answer to the first of these questions in regard to any reasonably common condition. I have often suggested that this particular method of clinical research could readily be developed in any major teaching hospital. The requirements are (1) a mechanism for finding whether each patient entering the hospital had a twin, (2) funds and facilities for finding each co-twin and persuading him or her to submit to medical study on those aspects relevant to the condition for which the index twins had sought treatment. About 1 in every 80 births is a twin birth, and, allowing for the higher mortality among twins, about 1 patient in 50 coming to hospital will have a living twin. Of these about 30% will be identical twins, 70% non-identical. At the Royal Melbourne Hospital there are about 65,000 patients per annum. This means that 4 or 5 index twins are admitted each day and that about 300 pairs of identical twins would potentially be available for study in the year. Assuming that half the available material could be investigated the task would be about appropriate to keep a small full-time unit fully occupied.

Let me try to make clear what such a type of investigation could accomplish:

1. It would gradually build up knowledge about the relative importance of environment and inheritance in regard to an increasing number of clinical conditions.

2. With that background, the possibility of preventive action (i.e., modification of the environment) could be properly assessed even in conditions where the influence of inheritance is very strong.

3. The premonitory signs of inherited disease that precede its full expression should in many instances

become recognisable. There are two important practical implications here. The first is that by early recognition of such premonitory signs we may be able to institute a régime that will delay the full or fatal expression of the disease; the second is that it may allow a more accurate prognosis of the life expectation of individuals for any sort of actuarial purpose.

4. It would provide a magnificent and varied clinical training for a succession of young doctors passing through the unit, giving an approach to patients as full human beings that tends to be lost when men are trained in clinical research too closely at the physiological level.

5. With the extension of such work over the whole medical world there would slowly develop a consciousness of the importance of inheritance, an accurate knowledge of the mode of inheritance of the common as well as the rare and striking human genetic anomalies, and an understanding of what can and cannot be accomplished by conceivable forms of control of human reproduction.

6. As in every type of effective research, there would arise new ideas and approaches which until the work is done are quite literally unthinkable. It is even possible that ways of preventing genetic deterioration may be found that could be tolerated by a free human community.

This brings me to my final point—that sooner or later ways *must* be found to reverse that process of genetic deterioration of our species that is demonstrably in process at the moment.

As a biologist I regard it as certain that man has evolved by the same process as other living organisms; as a doctor and for my present purpose I am concerned only with the health of the body. The evolution of tradition and civilisation is outside our province and uniquely human. The evolution of the body and of the defects of the body falls within the realm of genetics. Mendel's laws hold for man; there are biochemical mutants in man as well as in the moulds and bacteria that the microbial geneticist studies. Equally we can be certain that the line of mammalian evolution that led up to man was directed by the same process of gene mutation, recombination of gene patterns, and natural selection that can be seen at work in organisms susceptible to direct genetic investigation. Mutation by its very nature must normally be harmful—the mutation or combination of mutations leading to improvement of the type must inevitably be rare. Progressive evolution, in Fisher's words, is a miracle wrought by selective survival in the teeth of a storm of deleterious mutations.

If man is outside the workings of Nature, if his continuing progress toward his own bodily and spiritual ideal is predestined and determined by supernatural means, then what I am saying is meaningless and unnecessary. But if we accept the working hypothesis of scientific medicine that man is wholly a part of Nature and that his diseases can only be understood and remedied in the light of comparative biology, then I think we have got to face the situation realistically.

It has been estimated that the harmful mutation to hæmophilia occurs once in 50,000 births. Most hæmophiliacs have little chance of passing on the altered gene, and the symptomless female carriers would gradually diminish in number unless fresh mutations occurred. But as Muller has pointed out, if a maintenance therapy like insulin for diabetes was discovered which allowed hæmophiliacs to lead a normal reproductive life, nothing but deliberate human action could prevent a slow but inexorable increase in the proportion of hæmophiliacs until they became a majority of the human species. Every deleterious mutation which in one way or another does not prevent or diminish the fertility of those carrying it must eventually spread through the race like a slow-moving infectious disease. Somehow some means must be found to counteract the present trend by which the unhealthiest elements in the population of Western countries reproduce more rapidly than the healthy. I have already mentioned the evidence that in England the one measurable aspect of human value—intelligence—is falling at the rate of 1·6 points per generation. The democratic welfare State may have its virtues as a transitional compromise; but unless it finds an answer to the problem of genetic deterioration it will be doomed. In my gloomier moments I feel that a case might be made for the thesis that it will be the descendants of the *last* race to receive the blessings of civilisation who will eventually rule the world. In the old days of high birth-rate and very high infant mortality many healthy babies died, but almost certainly more of the genetically unsound than the sound and thus there was some automatic control of quality. Today the combination of the two-child family and preventive medicine has produced a situation highly desirable on the short-term view but on the long-term biological view leading straight to catastrophe.

There is no politically possible way of remedying this at present, but at the back of everything I have been saying is my conviction that here is *the* great task of future medical research—to plan the ways by which the bodily health and intelligence of human beings may last from generation to generation. It is a task for centuries rather than decades, but the sooner it is started the better. I hold no brief whatever for any present interference with the traditional but spontaneously changing pattern of human mating and reproduction. We know far too little; and what knowledge there is is far too little known to people generally. The task of the next hundred or even five hundred years is to gain the knowledge and educate the people till effective action at length becomes possible.

THE LATE RESULTS OF REPAIR OF LARGE HERNIAS WITH TANTALUM MESH

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AN experimental study of the reaction of living tissue to tantalum mesh, together with a preliminary report on its clinical use, was published in this journal four years ago (Douglas 1948). The late results of the repair of 36 cases of large or recurrent hernias are now presented.

DETAILS OF OPERATIONS

The details of the operations for incisional and umbilical hernias are seen in figs. 1 and 2, which are self-explanatory. It is most important to achieve a good overlap of fascia over the implanted mesh. In the case of inguinal hernias in males the testis was transposed through the conjoined tendon in the manner of Schmieden (1934) to avoid pressure of the edge of the mesh on the spermatic cord.

MATERIAL

13 inguinal, 8 para-umbilical, and 15 incisional hernias have been operated on (see table). Most were large hernias considered by colleagues unsuitable for repair by other methods. The remainder were recurrent hernias; no primary small hernias were treated with tantalum mesh.

CASES OF HERNIA REPAIRED WITH TANTALUM GAUZE

—	Type of hernia			Total
	Inguinal	Para-umbilical	Incisional	
No. of cases	13	8	15	36
Postoperative deaths	0	0	1	1
Death from other diseases since operation	2	0	2	4
Untraced	2	0	0	2
Recurrence	2	0	0	2

Examples of the types of hernia dealt with are seen in fig. 3. The average interval from operation to follow-up was 5·05 years, the shortest 4, and the longest 5 years 10 months.

RESULTS

There was one postoperative death in the series. A woman of 50 had a very large recurrent incisional hernia in the right hypochondrium. So great was the amount of bowel in the exteriorised sac that it was difficult to find space in the abdominal cavity for it. Perhaps for this reason the patient vomited a large amount of gastric contents while recovering from the anæsthetic and inhaled a good deal of the material. She was bronchoscoped within an hour of the mishap, but there was gross soiling of the distal bronchi. She died from bronchopneumonia on the third postoperative day. This is a real hazard in the repair of very large hernias. A Ryle's tube should be passed before operation and aspiration of the stomach done frequently during and after operation until the patient is fully conscious.

In the remaining 35 cases there have been four late deaths from intercurrent disease: one from carcinoma of the rectum, two from coronary occlusion, and one from a cerebrovascular accident. We were unable to trace 2 of the patients: a vagrant of 58 who had an inguinal hernia, and a woman of 53 with an incisional hernia who had changed her address and left no trace. The total trace-rate was therefore 34 out of 36 cases (94%).

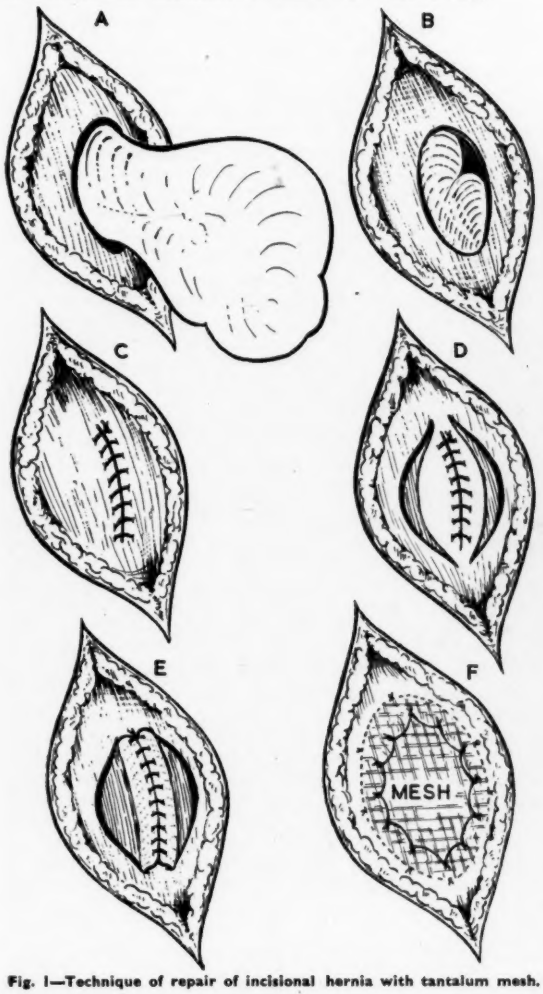

Fig. 1—Technique of repair of incisional hernia with tantalum mesh.

Among the 29 patients alive at the time of follow-up there have been two recurrences—both in inguinal hernias.

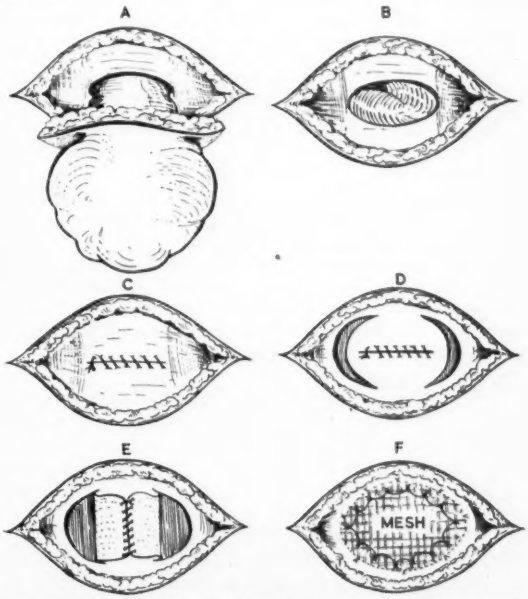

Fig. 2—Technique of repair of para-umbilical hernia with tantalum mesh.

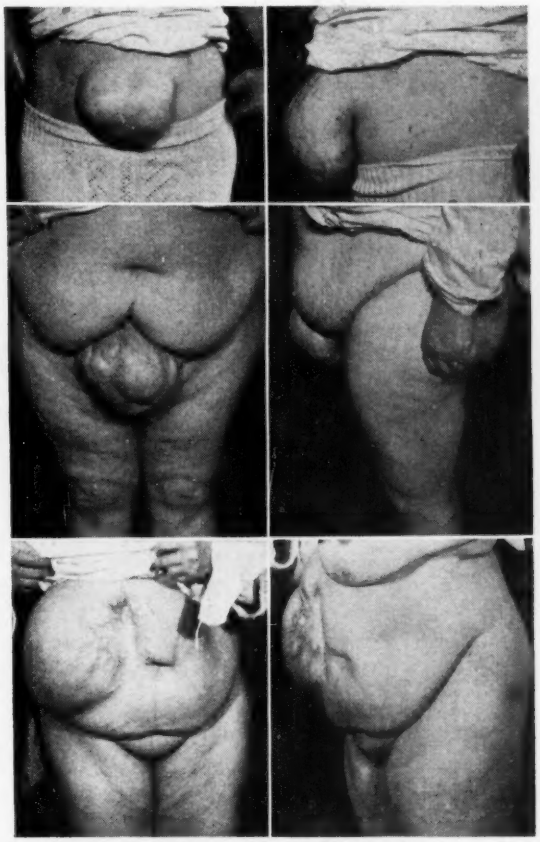

Fig. 3—Hernias dealt with in this series.

Recurrence 1.—A man, aged 56, had a large right scrotal hernia with a widely dilated deep inguinal ring. The Schmieden manœuvre was used, the testis and cord being transposed through the conjoined tendon. Within eleven months of this operation a small bulge appeared at this site, and this has become a little larger over the last four years. The patient does not wear a truss.

Recurrence 2.—A woman, aged 35, had a recurrent right inguinal hernia. It was difficult at operation to find in the region of the inguinal ligament sufficient tissue under which to countersink the mesh. The recurrence is in the form of a diffuse bulge over the operation site and causes some discomfort.

In the remaining 27 cases there has been no recurrence, and it is of particular interest that in none of the incisional or para-umbilical hernias has a recurrence been noted. There have been no discharging wound sinuses after the use of this technique, though in a series of cases which we are now studying in which nylon mesh was used there have been 2 cases of discharging sinuses.

DISCUSSION

Inguinal Hernia

The method is clearly not good for inguinal hernia, the reason, I think, being that it is difficult in recurrent cases to find enough tissue inferiorly to anchor the mesh securely. Further, in males there does not appear to be any satisfactory method of fitting the gauze snugly round the issuing spermatic cord. The Schmieden manœuvre obviously carries its own special risk of recurrence through the new deep inguinal ring.

Incisional and Para-umbilical Hernia

In view of the size of the hernias dealt with and the absence of recurrence in this group the method is clearly of value. In the past I have found it difficult to close any defect in the abdominal wall greater than 7 cm. in diameter by any technique. If the edges are pulled together with silk, fascia, or nylon, the sutures simply cut through the living tissue as they would through cheese. With mesh there is no such problem. Flaps are turned in from the edges of the defect, allowing the first layer to be closed easily without tension; the resulting defect is next filled with tantalum mesh.

Fracture of Mesh

As the result of repeated bending the mesh ultimately fractures. This does not seem to influence the result of the repair, probably because the strong fibrous tissue layer has grown through the framework of the mesh. But the ends of the wire gave rise to an uncomfortable pricking sensation in the woman in whom a recurrence was noted. She was very thin, and perhaps there was insufficient subcutaneous tissue to cover the fractured edge of the mesh. She was the only patient who complained of this sensation. I had thought that the late results of these herniotomies would be less satisfactory than the immediate results, but this follow-up study has shown this to be untrue. Both recurrences were seen within a year of operation.

SUMMARY

36 large or recurrent hernias have been repaired with tantalum mesh, the shortest period since operation being 4 years, the average 5 years.

There have been two recurrences, both in inguinal hernias.

There have been no recurrences in para-umbilical or incisional hernias.

No wound sinuses have developed.

The method is of little value in inguinal hernia but may be used with confidence in large incisional and para-umbilical hernias.

REFERENCES

Douglas, D. M. (1948) *Lancet*, i, 936.
Schmieden, M. (1934) Cited by Ogilvie, W. H., in Maingot's Post-graduate Surgery. London; vol. III, p. 3655.

CLINICAL ASPECTS OF THE TOXICITY OF POLYMYXINS A, B, AND E

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THE polymyxins are polypeptide antibiotics derived from different strains of *Bacillus polymyxa*. Five have been described and are designated by the alphabetical suffixes A to E. They are bactericidal and at least a hundred times more active against most gram-negative bacilli than against the gram-positive organisms (Brownlee et al. 1952). Although there were early reports of their clinical use (Swift 1948, Schoenbach et al. 1948), polymyxins A and D have not become popular, owing probably to the introduction of antibiotics with wider antibacterial spectra and to the attention focused on the proteinuria associated with the parenteral injection of polymyxins A and D; but recent reports (Yow 1952, Jawetz 1952, Swift and Bushby 1951, Jackson et al. 1951, Tomlin 1951, Kagan et al. 1951) on the efficiency of the polymyxins in certain types of meningitis, urinary infections, and burns, especially when the infecting organism is *Pseudomonas pyocyanea*, have reawakened interest in these antibiotics.

As a class, polypeptide antibiotics have undesirable side-effects which often render them unsuitable for parenteral use, and our early experiences with polymyxins A and B suggested that they were not exceptional. Proteinuria, ranging from a trace to 0·2 g. per litre, developed in 26 of 27 children given polymyxin A in doses of 4000 to 10,000 units per kg. of body-weight four-hourly for five days. Relatively impure polymyxin B* in similar doses given to 24 children, and in doses of 250,000 units given to 8 adults caused no proteinuria, but caused severe reactions at the sites of injection, pyrexia up to 102°F, malaise, and in 3 of the adults paræsthesia. In contrast, our more recent experiences with polymyxin E and with purer preparations of polymyxin B have shown that these polymyxins are suitable and safe for parenteral use, and, since there is now little doubt that the polymyxins are potent chemotherapeutic drugs, we are prompted to record our observations on the side-effects produced in 61 patients treated with these two polymyxins.

RESULTS

Polymyxin E.—Forty-seven patients, including 7 adults, were given intramuscular polymyxin E four-hourly for five days. Seven of these had longer courses of fourteen days or more for *Hæmophilus influenzæ* meningitis, along with intrathecal injections of doses ranging from 25,000 to 100,000 units once or twice daily for from five to fifteen days. For children individual doses were based on the scale of 10,000 to 12,500 units per kg. of body-weight. The dosage for adults was 250,000 units except in 2, when it was increased to 500,000 and 1,000,000 units (see below).

In contrast to our earlier experiences with polymyxin A and polymyxin B the toxic effects from polymyxin E were few and trivial and caused little discomfort to the patient. Protein, red cells, and casts appeared in the urine of 1 child only. This child, under treatment for *H. influenzæ* meningitis, died from an intercurrent infection, and the case has been described elsewhere (Swift and Bushby 1951). Microscopy of the kidneys revealed that the secretory epithelium of the kidney

* This early sample of polymyxin B and the polymyxins A and E were prepared by the Wellcome Research Laboratories; the more recent polymyxin B was prepared by Chas. Pfizer & Co., for Burroughs Wellcome & Co., U.S.A.

and glomerular tufts was slightly swollen, but the epithelium lining the proximal convoluted tubules was no more affected than the rest. The cells showed cloudy swelling, and in some there was nuclear degeneration. Dr. David Trevan, of the Wellcome Research Laboratories, reported that there was nothing to suggest damage by polymyxin E.

In 3 children there were rises of temperature up to 100°F, considered to have been caused by the antibiotic, but 6 other children had pyrexia reaching 99·8°F which subsided while polymyxin E was still being administered, and was probably not attributable to the antibiotic. Mild local reactions at the sites of injection occurred in 7 children. In 6 of them the dosage had been relatively large—i.e., 150,000–250,000 units—but the reactions caused little discomfort, never being so severe or so persistent as those due to the earlier polymyxin B. Of the 7 adults 2 developed slight pyrexia, and only 1 had slight local reactions, although all felt some pain at the injection site lasting a few hours. Such reactions seem to depend chiefly on the size of the dose injected.

Five adults complained of irritation and flushing of the face or trunk, and some dizziness when walking. Rashes developed in 2 children on long courses; in 1 of these a transient urticaria of the face and trunk appeared on the fifth day and disappeared while treatment was still being given, and in another, who had previously had papular urticaria, transient lesions typical of this condition developed on the eighth day.

The side-effects after intrathecal injection have been fully discussed elsewhere (Swift and Bushby 1951). Apart from pleocytosis and mild signs of meningeal irritation with the higher doses there were no reactions.

COMPARISON OF POLYMYXINS B AND E

Until recently we had treated only 1 patient, an infant, with the purer polymyxin B (Pfizer), and in this patient the side-effects were very like those seen in the children receiving the less pure British product. Now we have been able to compare the side-effects of polymyxin B (Pfizer) with those of polymyxin E by treating 6 adults with a three-day course of the American product, and a week later giving them a similar course of polymyxin E. Three patients were given the polymyxin B as received from America, and 3 were given it after further purification by a crystallisation method (Wilkinson 1949). The dosage was 250,000 units four-hourly intramuscularly. In 2 men of the second group the dose of polymyxin E was raised to 500,000 units and further increased to 1,000,000 units for the last three doses of their courses.

In every patient pain at the injection site was less with polymyxin E than with polymyxin B, even when the dose of polymyxin E was twice that of polymyxin B, but not when it was four times as great. Similarly, induration at the site of injection was considerably less and of shorter duration with polymyxin E, except perhaps when compared with the more highly purified polymyxin B. Pyrexia and malaise occurred with polymyxin B, whether purified or unpurified, but with polymyxin E only when the fourfold dosage was given. Other subjective sensations occurred with similar frequency with either drug.

Since all the patients in this group had infections of the urinary tract, there was some proteinuria before treatment but it was not obviously increased during or immediately after treatment, and no cellular casts were passed.

A child was also treated with both polymyxins, the polymyxin B (Pfizer) being given during a course of treatment with polymyxin E. The polymyxin E produced only very slight induration at the injection site, whereas definite induration and erythema occurred with polymyxin B.

INCIDENCE OF TOXIC REACTIONS

Polymyxin	No. of patients treated	No. of patients showing renal damage	No. of patients with local reactions	No. of patients with pyrexia	No. of patients with rashes
A	27	26	0	7	0
B (W.R.L.)	24	0	19	18	0
B (Pfizer)	8	0	6	3	0
E	53	0	8	4	2

DISCUSSION

The incidence of side-effects following intramuscular injection are summarised in the accompanying table, the subjective effects being omitted because so many of the patients were infants. There are striking differences between the side-effects of these antibiotics: polymyxin A produces renal damage but little or no reaction at the site of injection, whereas polymyxins B and E cause variable reactions at the injection site but no proteinuria. Polymyxins B and E produced paræsthesiæ in some patients; but, since only children were treated with polymyxin A, it is not known whether this antibiotic also produces these side-effects. The early samples of polymyxin B almost invariably caused malaise with pyrexia, but this has been much less with the more recent and purer polymyxin B.

Polymyxin A is apparently closely related to polymyxin D, for this antibiotic also produced proteinuria (Schoenbach et al. 1948), and polymyxin C, which has never been given to man, causes renal damage in animals. The polymyxins may therefore be divided into two groups according to their toxic effects: (1) polymyxins A, C, and D; and (2) polymyxins B and E.

Their toxic differences are interesting in view of their indistinguishable antibacterial activities, and may be explained by the differences in their molecular size and structure. Other polypeptides cause inflammation, and Spector (1951) found that peptides of about five amino-acid chain-length were not precipitated by ammonium sulphate, and caused only a mild reaction when injected, whereas peptides of 8–14 amino-acid chain-length were salted out by 75% saturation with ammonium sulphate, and caused more severe reactions. Polymyxin A appears to be closely related to the shorter chain-length peptides not only in producing insignificant local reactions but also in not being precipitated by ammonium sulphate. Polymyxin B resembles the longer peptides in causing a more intense inflammation, and being precipitated by 70% saturation with ammonium sulphate. Polymyxin E lies between polymyxins A and B, requiring 80% saturation to precipitate it.

Spector's observations offer an explanation for the differences in the local reactions of the polymyxins, and accordingly polymyxin A should have the smallest and polymyxin B the largest molecule. Bell et al. (1949) from osmometrical measurements calculated the molecular weights of polymyxins A and B to be 1293 and 1150 respectively, and Short (1948), calculating from the phenyl-alanine and threonine content, found the molecular weight of polymyxin B to be 2500.

Spector considers that peptides play a major part in the inflammation caused by burns and bacterial infections, and the similarity between the properties of these peptides and those of the polymyxins offers an explanation for the anomalous fact that the polymyxins are non-toxic to leucocytes yet cause inflammation when injected (Brownlee et al. 1952). The inflammation is not due to direct damage of the tissues but to the fact that the antibiotics behave as peptides derived from damaged tissue.

Differences in molecular weight and shape may also explain the differences in renal toxicity. Experiments on animals show that the damage to the kidneys is

restricted to the tubules, and only when there is proteinuria are high concentrations of the antibiotic excreted in the urine (Brownlee et al. 1952). This evidence suggests that the nephrotoxic polymyxins A, C, and D pass through the normal glomerulus and damage the tubule during resorption. Polymyxins B and E, on the other hand, do not usually cause renal damage and are present in the urine in low concentrations. It is therefore a reasonable conclusion that it is the molecular configuration which permits or prevents passage through the normal glomerulus.

Some of the subjective side-effects of the polymyxins may be due to histamine, for the intradermal injection of polymyxin in man produces a typical histamine triple response, and Kagan et al. (1951) found that the subjective side-effects of the polymyxins were relieved by anti-histamine drugs. Experimentally, however, no significant quantity of free histamine can be detected in polymyxin. Nevertheless polymyxin may cause the release of endogenous histamine, since the intravenous injection of 20,000 units per kg. of body-weight into dogs often produces a pronounced and sustained fall of blood-pressure closely resembling that produced by the powerful histamine-release drugs—e.g., 48–80 (Paton 1951)—and an increase of histamine can be demonstrated in the blood (Bushby and Green 1953).

All these side-effects have been reported before, but their frequency has varied according to different reports. Kagan et al. (1951) comment especially on the variability in the reports of the toxic reactions of polymyxin B. Referring to the pyrexial reactions they draw attention to the fact that of five separate workers only one noted pyrexial reactions and these in 62 of 66 patients. Most reports, however, agree that the polymyxins B and E seldom damage the kidneys.

It is unfortunate that the first polymyxins in man should have been the polymyxins A and D, which attracted publicity by their effect on the kidneys. The use of the group name, polymyxin, has also led to confusion; thus Hayes and Yow (1950), who successfully used polymyxin B in the treatment of infection with *Ps. pyocyanea*, state that Schoenbach et al. (1949) noted the commonest complication of polymyxin therapy to be renal damage, whereas the workers cited were referring only to polymyxin D.

After oral administration all the polymyxins are poorly absorbed (Brownlee et al. 1952), and in 12 children with gastro-enteritis treated by us with polymyxin A 40,000 units per kg. of body-weight four-hourly for 5–8 days no toxic side-effects were observed. Although polymyxin is effective in the local treatment of infected burns, absorption from such surfaces is poor, for no polymyxin is detectable in the blood, and no toxic symptoms are produced, when 1% polymyxin E ointment is used (Jackson et al. 1951). The side-effects observed by us after intramuscular administration occur only when the antibiotics are given by this route. Our experience shows that although polymyxin B and E cause some side-effects, these are not serious, causing at the most only temporary discomfort to the patient. The most troublesome of these subjective effects is the pain that persists for some hours at the injection site; this is less with polymyxin E than with polymyxin B, but is so mild that the use of these antibiotics can be confidently recommended.

SUMMARY

Polymyxin E given parenterally to 53 patients, and polymyxin B given parenterally to 32 patients, caused no proteinuria; this contrasts strongly with the high incidence of proteinuria produced by polymyxins A and D.

Early experiences with polymyxin B showed that it caused troublesome reactions, especially pain at the injection sites, and in some patients pyrexia, malaise, and mild paræsthesia. The incidence of pyrexia and malaise seems to be smaller with purer material.

Polymyxin E caused less pain at the injection site than did polymyxin B, but the incidence of paræsthesia was about the same.

It is suggested that the different side-effects of the polymyxins are due to differences in molecular structure, and that some of the subjective effects are due to the release of endogenous histamine.

Although the side-effects from parenteral polymyxin B and polymyxin E may be annoying to some patients they are not, especially with polymyxin E, sufficient to contra-indicate their use.

REFERENCES

Bell, P. H., Bone, J. F., English, J. P., Fellows, C. E., Howard, K. S., Rogers, M. M., Shepherd, R. G., Winterbottom, R., Dornbush, A. C., Kushner, S., SubbaRow, Y. (1949) *Ann. N.Y. Acad. Sci.* **51**, 897.
Brownlee, G., Bushby, S. R. M., Short, E. I. (1952) *Brit. J. Pharmacol.* **7**, 170.
Bushby, S. R. M., Green, A. F. (1953) To be published.
Hayes, E. R., Yow, E. (1950) *Amer. J. med. Sci.* **220**, 633.
Jackson, D. M., Lowbury, E. J. L., Topley, E. (1951) *Lancet*, ii, 137.
Jawetz, E. (1952) *Arch. intern. Med.* **89**, 90.
Kagan, B. M., Krevsky, D., Milzer, A., Locke, M. (1951) *J. Lab. clin. Med.* **37**, 402.
Paton, W. D. M. (1951) *Brit. J. Pharmacol.* **6**, 499.
Schoenbach, E. B., Bryer, M. S., Long, P. H. (1948) *Bull. Johns Hopk. Hosp.* **82**, 637.
— — — (1949) *Ann. N.Y. Acad. Sci.* **51**, 987.
Short, E. I. (1948) *Biochem. J.* **43**, xii.
Spector, W. G. (1951) *J. Path. Bact.* **63**, 93.
Swift, P. N. (1948) *Lancet*, i, 133.
— Bushby, S. R. M. (1951) *Ibid*, ii, 183.
Tomlin, C. E. (1951) *Arch. intern. Med.* **87**, 863.
Wilkinson, S. (1949) *Nature, Lond.* **164**, 622.
Yow, M. (1952) *J. Amer. med. Ass.* **149**, 1184.

ANALYSIS OF THE NORMAL ELECTRO-ENCEPHALOGRAM

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FOR some years electro-encephalographers have been occupied with the problem of differentiating quantitatively between normal and abnormal electro-encephalograms (E.E.G.). Because of the complexity of the material, the characteristics of the E.E.G. have mostly been assessed by direct inspection of the primary trace and measurement of trace height wherever a single frequency appeared in the record, description of the component parts being based largely on qualitative assessment. Methods have been evolved to quantify the material (Davis and Davis 1936, Hoagland et al. 1937, Golla et al. 1943, Engel et al. 1944), but none of these has been widely adopted. Several methods of wave-form analysis have been developed for this application (Grass and Gibbs 1938, Knott and Gibbs 1939, Gibbs 1940, 1942, Barbour 1947, Hoefer et al. 1949, Prast 1951, Krakau 1951).

Here we report on the results obtained in a normal population with the automatic wave-analyser devised by Grey Walter (Walter 1943a and b, Baldock and Walter 1946). Our material consisted of fifty men aged 20–58 and fifty women aged 17–61, who were either members or relations of the staff of the hospital.

METHOD

Electrodes were so placed that on either side six similar areas were bridged; of these the fronto-occipital, frontal, occipital, and precentral transverse positions have been used for this study. Bipolar recordings made

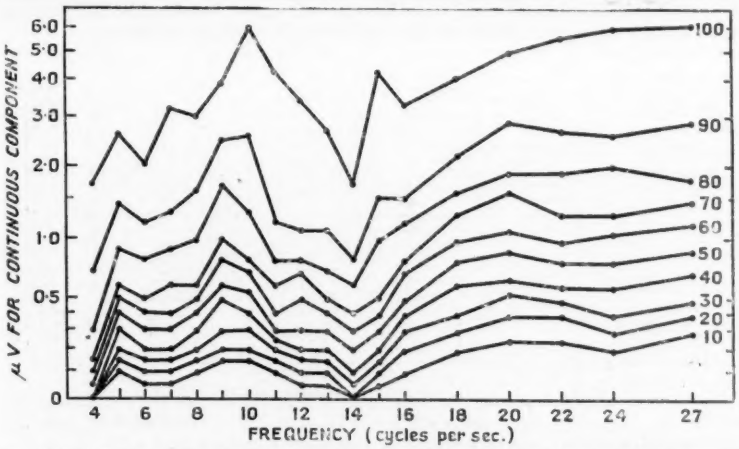

Fig. 1—Distribution curves of activity from 4 to 27 cycles per sec. for left precentral transverse area in 100 cases, independent of sex. Numerals attached to curves denote centiles.

from these areas in each person were taken by standard techniques and fed simultaneously into the wave-analyser. The instrument was set to write out the average of five successive 10-sec. epochs of analysis.

This period of 50 sec. has been used throughout this series; choice of this period was based on the consideration of the ratio of variability within the individual to inconstancy from one individual to another. This epoch can be shown to be a reasonable compromise between, on the one hand, extreme fluctuation in the individual due to short period and transient changes and, on the other, masking of broad individual characteristics.

The over-all sensitivity of the instrument was such that, at the standard setting, a continuous signal of 2μV at any of the frequencies in the range led to a write-out height of 1 cm., and this condition was repeatable to within ±10% of any setting at any level.

Voltage/time discontinuity presented without non-linearity or the introduction of spurious harmonics up to 100 times this level, though it was usual to use increased or decreased sensitivity settings of the apparatus where necessary. This setting was determined by choosing a satisfactory visual level of record in the primary trace, gain-to-gain cross-check accuracy being included in the over-all figure of ±10%. Part of the instrumentation has been described (Ellis 1950).

The examination took place in a quietened half-dark room. The patient's eyes were open for 10 sec. during each 50-sec. period. Analysed frequencies below 4 cycles per sec. were excluded from this study because, in this range, artefacts could not be differentiated from the cortical rhythms with any degree of certainty. The upper end of the spectrum used was fixed at 27 cycles per sec. after an investigation into the frequency distribution of the electromyogram had shown that muscle potentials influenced the analysed result above that frequency.

The write-out height of each frequency for each area for these one hundred cases was measured in centimetres; measurement error at all levels was not greater than ±0·05 cm. This measurement was next corrected so that a standard gain setting applied for any one area; this correction was necessary for purposes of comparison and did not introduce any error into the result. The amplitude scale on the ordinate was further corrected by a factor in the form log (x+0·2), which is a near approximation to the integral of the summed error of ±10% ±0·05 cm. together with normalisation of the distribution; the same factor has been applied to the statistical procedures used. The corrected measurements in centimetres were plotted, frequency by frequency, against amplitude in the form of dot distribution diagrams. These diagrams were used to check the adequacy or inadequacy of the recording level for the particular area investigated.

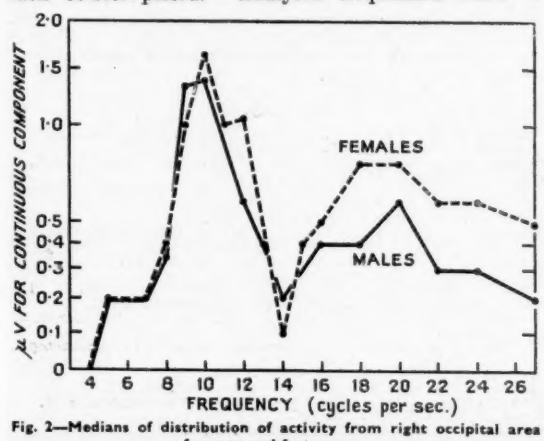

Fig. 2—Medians of distribution of activity from right occipital area for men and for women.

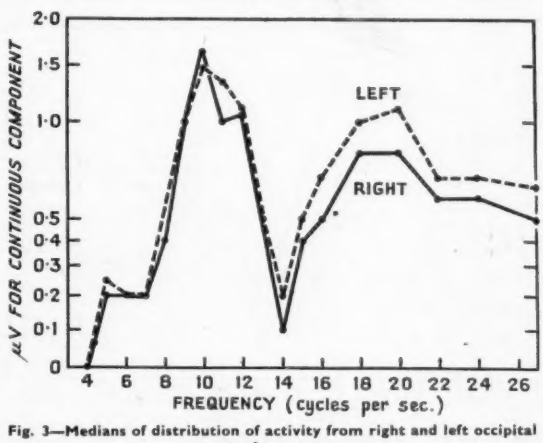

Fig. 3—Medians of distribution of activity from right and left occipital areas for women.

Distribution curves derived from the basic plot show the centile levels from 10 to 100 (fig. 1). The values below the 5th and above the 95th centile are controlled by a small number of people. These values show such a high degree of scatter that their exclusion is justified, particularly since the remaining 90% of the population can be adequately represented by the median; for this reason the median has been used in the illustrations that follow.

RESULTS

Sex.—Fig. 2 shows the results obtained for men and women in the right occipital areas. In the range of frequencies from 15 to 27 cycles per sec. the activity is of a significantly higher amplitude for women than for men. The curves also differ in symmetry over the alpha range, in that the curve for men is skewed, whereas that for

CORRELATIONS BETWEEN AMPLITUDES AT DIFFERENT FREQUENCIES IN CYCLES PER SEC.; COMBINED DATA FROM FIFTY MEN AND FIFTY WOMEN, LEFT AND RIGHT HEMISPHERES, FRONTO-OCCIPITAL DERIVATION

4	5	6	7	8	9	10	11	12	13	14	15	16	18	20	22	24	27	
1	+0·783	+0·684	+0·555	+0·132	−0·060	−0·160	+0·036	+0·210	+0·312	+0·527	+0·361	+0·169	+0·408	+0·240	+0·213	+0·135	+0·205	4
	1	+0·797	+0·676	+0·307	+0·047	−0·063	+0·037	+0·260	+0·276	+0·564	+0·352	+0·231	+0·390	+0·242	+0·231	+0·198	+0·238	5
		1	+0·838	+0·551	+0·195	+0·004	+0·212	+0·334	+0·294	+0·567	+0·501	+0·343	+0·417	+0·264	+0·280	+0·205	+0·259	6
			1	+0·706	+0·357	+0·158	+0·166	+0·293	+0·356	+0·539	+0·437	+0·292	+0·375	+0·246	+0·156	+0·107	+0·107	7
				1	+0·726	+0·446	+0·260	+0·208	+0·149	+0·193	+0·317	+0·223	+0·182	+0·104	−0·002	−0·016	−0·065	8
					1	+0·614	+0·388	+0·218	+0·146	+0·002	+0·285	+0·135	+0·166	+0·212	−0·017	−0·019	−0·113	9
						1	+0·625	+0·424	+0·260	−0·025	−0·020	+0·106	+0·156	+0·291	+0·047	−0·001	−0·134	10
							1	+0·842	+0·503	+0·214	+0·196	+0·312	+0·296	+0·311	+0·300	+0·196	+0·109	11
								1	+0·725	+0·500	+0·355	+0·433	+0·432	+0·393	+0·413	+0·288	+0·208	12
									1	+0·640	+0·338	+0·441	+0·526	+0·471	+0·437	+0·328	+0·259	13
										1	+0·507	+0·550	+0·613	+0·427	+0·434	+0·311	+0·314	14
											1	+0·638	+0·509	+0·400	+0·421	+0·358	+0·391	15
												1	+0·773	+0·638	+0·629	+0·596	+0·596	16
													1	+0·842	+0·737	+0·671	+0·648	18
														1	+0·810	+0·766	+0·645	20
															1	+0·851	+0·781	22
																1	+0·848	24
																	1	27

women shows an almost symmetrical distribution about the peak frequency of 10 cycles per sec.

Side.—The curves for the right and left occipital areas are shown in fig. 3. Side differences have been described (Brazier and Finesinger 1944, Cornil and Gastaut 1947); but, because of differences of technique, comparison with our results is not profitable. In our findings it is noteworthy that the differences between the right and left sides are similar to those existing between men and women. This side/sex correspondence has been found in other fields (Holt 1949).

Areas.—The considerable difference between areas is illustrated in fig. 4. The dominance of the alpha activity occipitally is in accordance with generally accepted findings. The activity in the precentral area is maximal

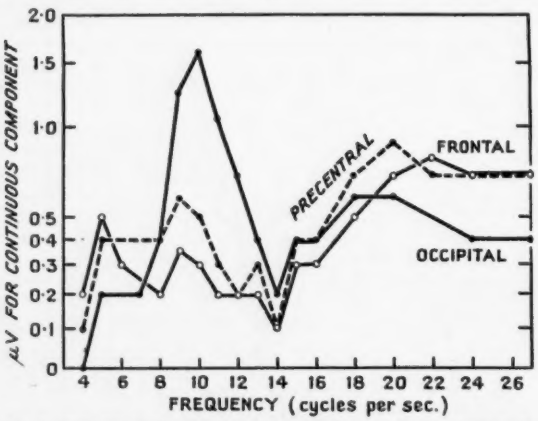

Fig. 4—Medians of distribution of activity from right hemisphere in 100 people (50 males and 50 females) for occipital, frontal, and precentral transverse derivations.

in the higher frequency range with a peak at 20 cycles per sec.; the secondary peak at 9 cycles per sec. is evidence that, even this far forward, the alpha rhythm is not inconsiderable. Theta activity reaches its maximum in the frontal lobes, though the fast group of frequencies is still the dominant component, as in the precentral area.

Frequency Intercorrelations

The method of treatment of the material so far presented has masked completely individual patterns and effects. An attempt was therefore made in this study to assess the relationships between frequencies and groups of frequencies within individuals to see whether specific patterns or associations emerged. Calculations were made to obtain correlation and intercorrelation products between amplitudes at all frequencies measured. The accompanying table, which shows the combined results for both hemispheres of our 100 cases, illustrates the value of this sort of study. The following are the main features of this mixed grouping:

(1) The correlations within the band of theta frequencies (4–7 cycles per sec.) are high and positive, showing that it is usual for these components to rise and fall together.

(2) There is a positive correlation between the band of theta frequencies and 14 cycles per sec. and, to a lesser degree, 15 cycles per sec. This association, if unexpected, is of particular interest.

(3) The individual frequencies in the alpha range are remarkably independent of other influences and show little correlation with anything except their immediate neighbours. Activity at 8–10 cycles per sec. is, in fact, marked by a high proportion of negative values.

(4) Frequencies of 16 or more cycles per sec. show a wide and progressively increasing spread of association with rising frequency.

These findings will want further analysis with separation of areas, sides, and sexes, but they show how a normal pattern of correlation can be established.

SUMMARY

The electro-encephalogram of 100 normal adults divided equally for sex have been investigated with an automatic low-frequency wave-analyser.

The several techniques used for treating the results are described.

Distribution diagrams and curves of activity in the range of frequencies from 4 to 27 cycles per sec. are shown.

Comparisons and intercorrelations between sexes, cortical areas, and hemispheres are illustrated.

The value of a study of relationships between frequencies and groups of frequencies is suggested.

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REFERENCES

Baldock, G. R., Walter, W. G. (1946) *Electron. Engng*, **18**, 339.
Barbour, I. (1947) *Rev. sci. Instrum.* **18**, 516.
Brazier, M. A. B., Finesinger, J. E. (1944) *J. clin. Invest.* **23**, 303.
Cornil, L., Gastaut, H. (1947) *Pr. méd.* **55**, 421.
Davis, H., Davis, P. A. (1936) *Arch. Neurol. Psychiat., Chicago*, **36**, 1214.
Ellis, N. W. (1950) *J. sci. Instrum.* **27**, 248.
Engel, G. L., Romano, J., Ferris, E. B. jun., Webb, J. P., Stevens, C. D. (1944) *Arch. Neurol. Psychiat., Chicago*, **51**, 134.
Gibbs, F. A. (1940) *Trans. Amer. neurol. Ass.* **66**, 211.
— (1942) *J. nerv. ment. Dis.* **95**, 417.
Golla, F., Hutton, E. L., Walter, W. G. (1943) *J. ment. Sci.* **89**, 216.
Grass, A. M., Gibbs, F. A. (1938) *J. Neurophysiol.* **1**, 521.
Hoagland, H., Cameron, D. E., Rubin, M. A. (1937) *Amer. J. Psychiat.* **94**, 183.
Hoefer, P. F. A., Markey C. Schoenfeld, R. L. (1949) *Electroenceph. clin. Neurophysiol.* **1**, 357.
Holt, S. B. (1949) *Ann. Eugenics*, **14**, 329.
Knott, J. R., Gibbs, F. A. (1939) *Psychol. Bull.* **36**, 512.
Krakau, C. E. T. (1951) *Electroenceph. clin. Neurophysiol.* **3**, 97.
Prast, J. W. (1951) *Ibid*, p. 101.
Walter, W. G. (1943a) *Electron. Engng*, **16**, 9.
— (1943b) *Ibid*, p. 236.

BLOOD-PYRUVATE LEVELS IN SUBACUTE COMBINED DEGENERATION OF CORD

EFFECT OF VITAMIN B_{12} THERAPY

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IN the course of a study of pyruvate metabolism in peripheral neuritis and myelitis we have had the opportunity of investigating three untreated cases of subacute combined degeneration of the cord, and of observing the effect of treatment with vitamin B_{12} on the blood-pyruvate levels in these cases. In view of the difficulty of obtaining cases of this condition that have received no treatment with either liver concentrates or vitamin B_{12} we describe here the results obtained.

METHOD

On admission to hospital blood-pyruvate levels were measured by the method of Friedemann and Haugen (1943) in the fasting state and at 60 and 90 min. after a loading dose of glucose (Williams et al. 1943). The mean levels which we have obtained in healthy people under these conditions are $0{\cdot}76 \pm 0{\cdot}18$ mg. of pyruvic acid per 100 ml. of blood in the fasting state, and $0{\cdot}92 \pm 0{\cdot}17$ and $0{\cdot}94 \pm 0{\cdot}20$ mg. per 100 ml. at 60 and 90 min. respectively (Joiner et al. 1950). The test was repeated after a course of parenteral therapy with vitamin B_{12}.

CASE-RECORDS

Case 1.—A married woman, aged 28, admitted to hospital in December, 1950, with two years' history suggesting pernicious anæmia, had had no effective treatment. Two weeks before admission there had been a sudden onset and rapid progression of paræsthesiæ and loss of feeling and power in both feet and legs. Just before admission the paræsthesiæ spread to the hands.

On examination the patient was pale, had a smooth tongue, and could not walk. Muscular tone in the legs was increased, coördination was grossly impaired, and there was some weakness of hip flexion. Light touch and position sense were impaired in both legs. Deep reflexes were increased, and both plantar responses were extensor.

Investigations showed histamine-fast achlorhydria. Hb 59%, red cells 2,300,000 per c.mm., mean cell diameter (M.C.D.) 7·6 μ, conspicuous anisocytosis and poikilocytosis, and sternal marrow typical of pernicious anæmia.

Treatment with vitamin B_{12} 50 μg. three times a week was started on Jan. 9, 1951. No other vitamin therapy was given. This produced a reticulocyte response and by March 1, 1951, the blood picture was normal. Improvement in the neurological condition was slower, but by March 16 the patient could walk unaided, although the plantar responses remained weakly extensor.

Pyruvate metabolism was as follows:

Date	*Fasting*	*Blood-pyruvic acid (mg. per 100 ml.) 90 min. after glucose*	
Jan. 8 1951	0·55	1·70	before vitamin B_{12} therapy
,, 22 ,,	0·78	1·46	14 days after start of vitamin therapy
March 15 ,,	0·41	1·02	2 months ,, ,, ,, ,, ,,
June 29 ,,	0·83	1·10	6 ,, ,, ,, ,, ,,

Case 2.—A man, aged 60, was admitted to hospital in March, 1952, with six months' history of numbness of the hands and feet.

On examination his skin was pale yellow, his tongue smooth, and his gait grossly ataxic. There was weakness of the hand muscles and of hip flexion, with impairment of sense of position and of vibration in the arms and legs, and of superficial sensation below the knees. The calves were tender, and the knee and ankle jerks were absent.

Investigations showed Hb 76%, red cells 3,400,000 per c.mm., M.C.D. 7·9 μ, with anisocytosis and poikilocytosis. There was a histamine-fast achlorhydria.

Treatment with vitamin B_{12} 100 μg. twice weekly was started on May 31. No other vitamin therapy was given. The blood picture was normal on July 15, and there was a fairly rapid improvement in walking and physical signs.

Pyruvate metabolism was as follows:

Date	*Fasting*	*Blood-pyruvic acid (mg. per 100 ml.) 90 min. after glucose*	
May 30 1952	0·75	2·60	before vitamin B_{12} therapy
June 12 ,,	0·87	1·26	13 days after start of vitamin therapy

Case 3.—A married woman, aged 57, admitted to St. Bartholomew's Hospital under Dr. J. W. Aldren Turner in June, 1952, had noticed numbness of the finger-tips and of the feet for eight months, and had had difficulty in picking up small objects. For six months before admission her gait had been unsteady.

On examination power was normal, but muscle tone in the legs was slightly increased, and coördination was slightly impaired. Knee-jerks were feeble, ankle-jerks absent, and plantar responses doubtfully extensor. Superficial sensation was impaired below the knees, vibration sense absent in the lower limbs, and position sense impaired in the toes.

Investigations showed Hb 92%, red cells 4,350,000 per c.mm., colour-index 1·07, mean corpuscular volume 92 c.μ, histamine-fast achlorhydria, and sternal marrow like that of subacute combined degeneration.

Treatment with vitamin B_{12} 40 μg. on alternate days was started on July 18. No other vitamin therapy was given. No change in physical signs occurred within fourteen days, but the patient thought that the numbness was less. Two months later there had been a progressive slow improvement in her condition.

Pyruvate metabolism was as follows:

Date	*Fasting*	*Blood-pyruvic acid (mg. per 100 ml.) 90 min. after glucose*	
June 27 1952	0·83	1·77	before vitamin B_{12} therapy
July 15 ,,	0·81	0·91	17 days after start of vitamin therapy

COMMENTS

Since, so far as we are aware, no evidence of any clear-cut relationship between pyruvate metabolism and vitamin B_{12} has been described, and since the method of Friedemann and Haugen (1943) is not completely specific for pyruvic acid but also estimates other keto-acids to some extent, we thought it advisable in cases 2 and 3 to separate the blood keto-acids by paper chromatography and so to obtain individual estimates for the pyruvic and α-ketoglutaric acids normally found in human blood (El Hawary and Thompson 1953). The results obtained are shown in the accompanying table. The values of 1·29 and 1·15 mg. of pyruvic acid per 100 ml. of blood for the 90 min. specimens obtained before treatment are significantly higher than the corresponding levels of the separated pyruvic acid found in normal people by this technique. It will be seen also that the 90 min. samples after vitamin B_{12} therapy are only 0·37 and 0·39 mg. per 100 ml. respectively in these two cases—i.e., within the normal range.

The values for α-ketoglutaric acid are not raised and are unaffected by treatment with vitamin B_{12}. The

LEVELS OF SEPARATED BLOOD KETO-ACIDS BEFORE AND AFTER TREATMENT WITH VITAMIN B_{12}

Case no.	Pyruvic acid (mg. per 100 ml.)		α-Ketoglutaric acid (mg. per 100 ml.)	
	Fasting	90 min.	Fasting	90 min.
2:				
Before treatment ..	0·33	1·29	0·20	0·19
After treatment ..	0·24	0·37	0·20	0·19
3:				
Before treatment ..	0·37	1·15	0·17	0·31
After treatment ..	0·31	0·39	0·23	0·31

only other keto-acid detected by paper chromatography in the blood samples from these patients was acetoacetic acid; however, owing to the partial decarboxylation which the hydrazone of this acid undergoes during the extraction and chromatographic procedures, we cannot yet estimate it quantitatively.

Chromatographic separation therefore confirms our findings with the Friedemann and Haugen technique of raised blood-pyruvate levels in these three cases of subacute combined degeneration. Our observation that treatment, limited to the parenteral administration of vitamin B_{12}, led to a rapid return to normal of these levels is in agreement with the earlier finding of normal pyruvate levels in six treated cases of this condition (Joiner et al. 1950). We have found normal blood-pyruvate levels in one untreated case of pernicious anæmia with no neurological signs or symptoms.

These findings clearly need confirmation, but our tentative conclusion that in subacute combined degeneration of the cord there is a defect of pyruvate metabolism which can be rectified by treatment with vitamin B_{12} is to some extent supported by the demonstration by Scheinberg (1951) of a diminution in the oxygen consumption of the brain in pernicious anæmia and subacute combined degeneration, the degree of which appeared to be related to the severity of the neurological involvement.

SUMMARY

Raised blood-pyruvate levels were found in three untreated cases of subacute combined degeneration of the cord.

Treatment with crystalline vitamin B_{12} led to a rapid return to normal of these levels.

We wish to thank Dr. J. W. Aldren Turner, Dr. A. C. Hampson, and Dr. M. J. McArdle for permission to study and report on their cases; Dr. R. L. Waterfield for hæmatological reports; Mr. D. H. Burchett for technical assistance; and the Medical Research Council for a grant to one of us (G. R. W.).

REFERENCES

El Hawary, M. F. S., Thompson, R. H. S. (1953) *Biochem. J.* (in the press).
Friedemann, T. E., Haugen, G. E. (1943) *J. biol. Chem.* **147**, 415.
Joiner, C. L., McArdle, B., Thompson, R. H. S. (1950) *Brain*, **73**, 431.
Scheinberg, P. (1951) *Blood*, **6**, 213.
Williams, R. D., Mason, H. L., Power, M. H., Wilder, R. M. (1943) *Arch. intern. Med.* **71**, 38.

CONGENITAL ADRENOCORTICAL HYPERPLASIA

A METABOLIC STUDY

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THE syndrome of bilateral adrenocortical hyperplasia, associated with pseudohermaphroditism in the female infant and with sexual precocity in the male, has been well recognised for many years. It is now accepted that the sexual abnormalities of these patients are due to excessive secretion of androgen by the hyperplastic adrenal glands. No metabolic disturbances were recorded in these patients until Wilkins et al. (1940) reported a case of sexual precocity in a young boy who had an electrolyte disturbance similar to that of Addison's disease. He died with the symptoms and signs of an addisonian crisis. At necropsy both adrenal cortices were found to be hyperplastic. Wilkins et al. concluded that in this case the adrenals had secreted excessive androgenic hormones but insufficient salt-retaining hormone.

There are now several records of similar cases, both in boys and in female pseudohermaphrodites, where death from adrenal insufficiency has taken place despite gross hypertrophy of the adrenal cortices. We describe here a patient with female pseudohermaphroditism, characterised by excessive adrenal production of androgen, who died in addisonian crisis. Studies with adrenocorticotropic hormone (A.C.T.H.) and cortisone were carried out in an attempt to elucidate the underlying physiological disturbance in such cases.

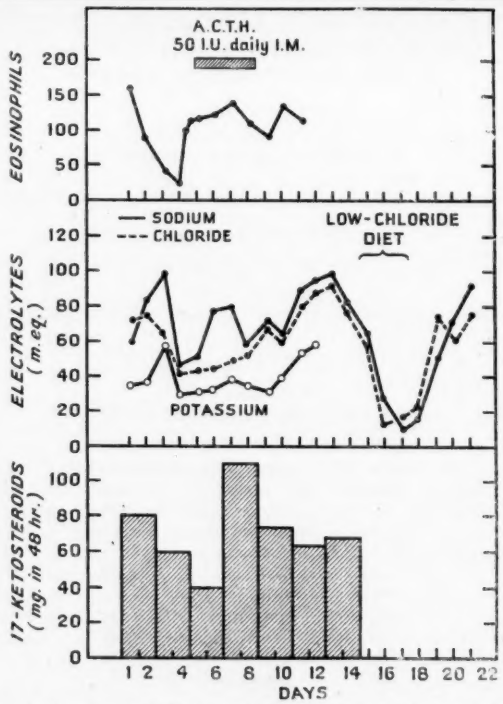

Fig. 1—Response to A.C.T.H. and to restriction of dietary chloride.

CASE-RECORD

A girl, aged 6 years 9 months, was admitted to the London Hospital in September, 1950. The third of five children in a normal family, she was born at full term, by normal labour, and weighing 7 lb. Her clitoris was noticed at birth to be larger than normal and had since slowly increased. As a baby she was breast-fed and healthy, and did not vomit. At the age of 18 months she had a mild attack of whooping-cough without any undue constitutional upset. At the age of 2 years she started to have attacks of frontal headache with nausea and vomiting, lasting two or three days and occurring every two or three months. Pubic hair began to grow at the age of 3 years, and at the same age she had chickenpox and measles without complications. The attacks of vomiting became more frequent and caused some prostration, but ceased altogether soon after her fourth birthday. From that time she remained very well and seemed to be stronger and slightly taller than most girls of her age. At the age of $5\frac{1}{2}$ years her 17-ketosteroid excretion was 11 mg. in twenty-four hours.

On examination she was $47\frac{1}{2}$ in. tall and weighed 50 lb. She was a feminine-looking little girl of normal body proportions and considerable muscular strength. Her skin was normal, and she had no acne. Her scalp hair was normal, and she had no excess hair on limbs or face. There was a slight growth of axillary hair and a moderate growth of pubic hair. No breast tissue was palpable. Her clitoris was 1 in. long, her labia majora were hypertrophied, and her urethral orifice was separate from her vagina. Otherwise no abnormality was found.

Investigations.—Radiography show a normal skull and sella turcica and bones of wrist, elbow, shoulders, and knees resembling those of a girl aged about 12 years. An intravenous pyelogram was normal. The excretion of 17-ketosteroids was 30 mg. in twenty-four hours (average of four estimations by the polarographic method of Barnett et al. 1946). The B fraction was 4·5% (average of four estimations).

Response to Injection of Adrenaline.—No eosinopenia was observed at four or six hours after the injection of 0·4 ml. of 1/1000 adrenaline.

Response to Restriction of Salt.—On restriction of dietary sodium chloride to less than 0·5 g. daily there was prompt normal diminution in output of sodium chloride (fig. 1).

Response to A.C.T.H.—The patient was kept on a diet of constant sodium, potassium, chloride, and fluid intake. A.C.T.H. prepared in our own laboratory (Cortis-Jones et al. 1949) was injected six-hourly in a dose (daily total 50 I.U.) known to stimulate the adrenal glands in a normal adult. The results are shown in fig. 1. There was no evidence of eosinopenia, retention of salt, or loss of potassium in response to A.C.T.H. On the other hand, the output of 17-ketosteroids was significantly increased.

Response to Cortisone.—The effect of cortisone on circulating eosinophils and urinary excretion of sodium, potassium, chloride, and 17-ketosteroids was studied during the second admission in January, 1951. Cortisone acetate 50 mg. was injected twice daily for ten days. A progressive decrease in eosinophils followed; there was slight retention of salt; and the output of 17-ketosteroids was strikingly diminished (fig. 2).

Effect of Continued Cortisone Therapy.—It was impossible to keep the child in hospital and in view of these results it was decided to treat her at home with oral cortisone daily. Her progress over the subsequent seven months is shown in fig. 3. Two weeks after the ten-day course described above, 12·5 mg. of cortisone was given daily for ten days. A mild attack of vomiting developed, and cortisone was withheld by the mother. At this time the output of 17-ketosteroids had risen to an abnormal level. The dose of cortisone was raised to 25 mg. daily for seven weeks. At the end of this course the output of 17-ketosteroids had fallen to less than 1 mg. in twenty-four hours. Clinical examination showed no change in the child's appearance since the first admission. Cortisone therapy was discontinued, and her condition remained satisfactory for a month. A severe attack of headache and vomiting then came on, followed by much weakness for five days. The output of 17-ketosteroids after the attack was again abnormally high. Two months after the attack cortisone therapy (50 mg. twice weekly) was resumed. During the fourth week of this course a further attack of vomiting came on and was followed by extreme prostration and death. Unfortunately it was difficult to maintain close contact with the patient, and it was impossible to make any observations during the attacks.

Necropsy revealed a grossly dehydrated child. Pubic hair was present, but no axillary hair. The clitoris was enlarged, but the vagina, uterus, fallopian tubes, and ovaries appeared normal. The urethra was separated from the vagina. Both adrenals showed considerable cortical hyperplasia (left 13·3 g., right 11·6 g.).

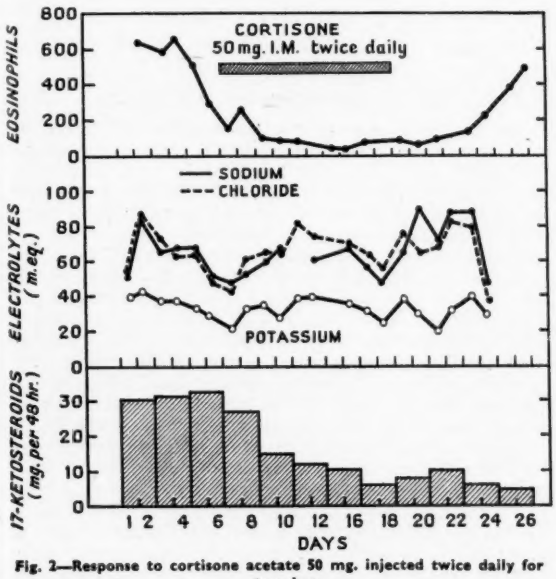

Fig. 2—Response to cortisone acetate 50 mg. injected twice daily for ten days.

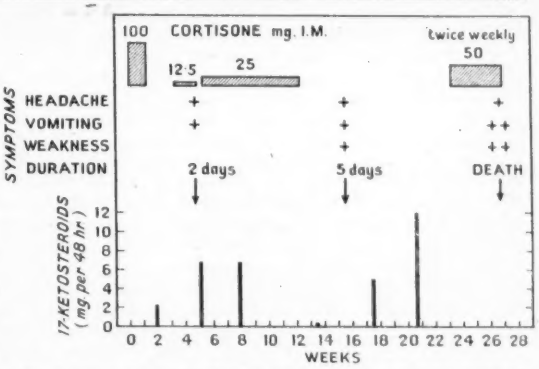

Fig. 3—Response to continuous therapy with cortisone acetate.

DISCUSSION

The clinical diagnosis of adrenal pseudohermaphroditism in this patient was based on the presence of an enlarged clitoris at birth, progressive virilisation with a high 17-ketosteroid excretion, and the advanced state of epiphyseal development. An unusual feature was the presence of separate urethral and vaginal orifices. Wilkins (1950) records only 1 such case, for the usual finding is a urogenital sinus. The degree of normal genital differentiation in this patient suggests that the excessive androgenic stimulus from the adrenals developed later in fœtal life than is usual in such cases.

The natural history of the metabolic disturbance is also unusual, in that there were no symptoms referable to adrenal insufficiency until attacks of vomiting developed between the ages of 2 and 4 years. In view of the child's subsequent progress these attacks were most probably related to adrenal insufficiency. Examination of published reports of 22 fatal cases shows that symptoms of adrenal failure developed within the first month of life in 18, and between the ages of 6 weeks and 7 months in 3 cases; only 1 patient was free from symptoms until the age of $3^1/_2$ years.

The clinical picture of vomiting, dehydration, and collapse that preceded the death of this patient has been described in all the reported cases in which death was due to adrenal failure. The picture is closely similar to that of an addisonian crisis in the adult. As with Addison's disease, a crisis may be precipitated by infection (Thelander 1946) or operation (Allibone et al. 1947), and death may take place despite restoration of the electrolyte balance (Zuelzer and Blum 1949). The biochemical findings have been depletion of sodium and retention of potassium. Few data are available on the blood-sugar levels during a crisis, but severe hypoglycæmia has been reported (White and Sutton 1951). Adrenal failure in the presence of hyperplastic adrenals seems to be very like failure due to destruction of these glands. The published data do not justify the view (Wilkins and Lewis 1948) that this adrenal failure with excessive production of androgen is confined to a lack of salt-retaining hormone. In contrast to this group, most patients with hyperplastic adrenals secreting excessive androgens from before birth undergo progressive virilisation without clinical evidence of adrenal failure. Nevertheless the investigations of Bartter et al. (1951) and Wilkins et al. (1950) show that there is an underlying abnormality of the adrenal cortex common to patients with and without overt adrenal insufficiency.

The case reported here is of particular interest in that studies with A.C.T.H. and cortisone were made when there was no clinical evidence of adrenal failure, and the patient survived a period of very restricted salt intake

without any disturbance of electrolyte balance. Nevertheless injection of A.C.T.H. in a dose known to cause electrolyte and eosinophil changes in a normal adult did not produce either retention of salt or loss of potassium and did not lower the eosinophil-count. By contrast the already excessive output of 17-ketosteroids was significantly increased. These results confirm the findings of Bartter et al. (1951) in 3 similar cases, and show that the physiological abnormality of the syndrome lies in the adrenal, which responds to A.C.T.H. by an increased production of androgens without significant increase in the secretion of the other adrenocortical hormones.

The administration of cortisone to the patient was followed by slight retention of salt and a considerable decrease in the number of circulating eosinophils. The most striking effect was the depression of the output of 17-ketosteroids to normal levels. Further treatment led to a continued diminution of the output of 17-ketosteroids, and virilisation did not appear to progress. The growth of axillary hair noted before cortisone was given had disappeared at death. In other reported cases more intensive and prolonged cortisone therapy has led to a definite regression of virilisation and emergence of feminine characteristics (Wilkins et al. 1951). If cortisone suppresses adrenal function by inhibiting secretion of A.C.T.H. rather than by direct action on the adrenal, the excessive androgen production in these cases is brought about by A.C.T.H. The presence of bilateral adrenocortical hyperplasia favours the concept of increased secretion of A.C.T.H. In an attempt to obtain direct evidence of this the urine of our patient was tested for A.C.T.H.-like activity. Considerable quantities of some substance which caused severe depletion of adrenal ascorbic acid in hypophysectomised rats were found. This substance was not present in the urine of normal adults.

The failure of increased production of A.C.T.H. to elicit a comparable increase in adrenal secretion of metabolically active hormones must be due to some abnormality in the synthesis of hormones within the adrenal. The probable nature of this abnormality is revealed by studies of the synthesis of hormones in perfused adrenals (Hechter et al. 1951). The action of A.C.T.H. seems to be limited to the initial stage in which cholesterol is converted to C_{19} and C_{21} compounds. The subsequent conversion of these compounds, as yet unidentified, into adrenocortical hormones is under the control of various enzyme systems of the adrenal gland. These subsequent enzymic reactions are not controlled by A.C.T.H. The C_{19} precursors formed under the influence of A.C.T.H. are finally metabolised to 17-ketosteroids, and their biological activity is androgenic. The C_{21} precursors are converted into glucocorticoids and possibly mineralocorticoids by the action of adrenal enzymes. Therefore a deficiency of one or more of these enzymes would lead to deficient production of corticosteroids despite an adequate stimulation of the adrenal by A.C.T.H. Sayers (1950) has shown that the amount of A.C.T.H. secreted by the pituitary is regulated by the level of circulating adrenal corticosteroids on the basis of a feed-back mechanism. A deficient production of these steroids will therefore lead to increased secretion of A.C.T.H. Adrenal androgens, on the other hand, do not have a significant effect in controlling the output of A.C.T.H.

The facts outlined above can explain the adrenal abnormality seen in the female pseudohermaphrodite and the male infant with sexual precocity associated with adrenal hyperplasia. We suggest that the primary defect in these cases is an absence of one of the enzyme systems essential to the normal production of metabolically active adrenocortical hormones. The familial incidence of the condition, its occurrence in both sexes, and its onset in fœtal life make it probable that the enzyme deficiency has a genetic origin. The low level of circulating corticosteroids leads to an excessive secretion of A.C.T.H. The adrenal responds to this by cellular hyperplasia and the excessive production of androgens. Directly after birth either the baby dies from failure to elaborate corticosteroids or the secretion of A.C.T.H. is so great that enough vital hormones are formed through some type of synthesis to enable the child to live. Gross virilisation of the female and sexual precocity in the male are inevitable side-effects of the attempt to produce sufficient corticosteroids to maintain life.

Thus the condition is not considered as a primary disorder of sex hormones but as an inborn error of metabolism, in which the pituitary-adrenal mechanism is over-stimulated to compensate for adrenal insufficiency.

SUMMARY

A case of adrenal pseudohermaphrodism is reported.

The patient's response to A.C.T.H. was abnormal.

Cortisone diminished the excessive output of 17-ketosteroids.

Death was due to adrenal insufficiency.

It is suggested that the essential lesion in these cases is the absence of an adrenal enzyme system leading to defective production of corticosterones.

ADDENDUM

Since this paper was submitted Kelley et al. have reported a metabolic study of female pseudohermaphrodites, and their conclusions are very similar to ours (*J. clin. Endocrinol.* 1952, **12**, 1140).

REFERENCES

Allibone, E. C., Baar, H. S., Cant, W. H. P. (1947) *Arch. Dis. Childh.* **22**, 211.

Barnett, J., Henly, A. A., Morris, C. J. O. R. (1946) *Biochem. J.* **40**, 445.

Bartter, F. C., Albright, F., Forbes, A. P., Leaf, A. Dempsey, E., Carroll, E. (1951) *J. clin. Invest.* **30**, 237.

Cortis-Jones, B., Crooke, A. C., Henly, A. A., Morris, P., Morris, C. J. O. R. (1949) *Biochem. J.* **46**, 173.

Hechter, O., Zaffaroni, A., Jacobsen, R. P., Levy, H., Jeanloz, R. W., Schenker, V., Pincus, G. (1951) *Recent Progr. Hormone Res.* **6**, 215.

Sayers, G. (1950) *Physiol. Rev.* **30**, 241.

Thelander, H. E. (1946) *J. Pediat.* **29**, 213.

White, F. P., Sutton, L. E. (1951) *J. clin. Endocrinol.* **11**, 1395.

Wilkins, L. (1950) The Diagnosis and Treatment of Endocrine Disorders in Childhood and Adolescence. Springfield, Ill.

— Fleischmann, W., Howard, J. E. (1940) *Endocrinology*, **26**, 385.

— Lewis, R. A. (1948) *Trans. Conf. metab. Conval.* p. 168.

— — Klein, R., Gardner, L. I., Crigler, J. F. jun., Rosemberg, E., Migeon, C. J. (1951) *J. clin. Endocrinol.* **11**, 1.

— — — Rosemberg, E. (1950) *Bull. Johns Hopk. Hosp.* **86**, 249.

Zuelzer, W. W., Blum, A. jun. (1949) *J. Pediat.* **35**, 344.

PARONYCHIA

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IN subcutaneous infections, including those of the digital pulp space, it may be assumed that in most cases: (1) the infection is due to a staphylococcus, associated occasionally with a streptococcus; (2) the longer the infection has been established, the more likely it is to have destroyed tissue with or without the development of fibro-fatty slough; and (3) the longer the infection has been established, the more extensive is the anatomical involvement, the larger the abscess if there is one, the more likely it is to cause skin necrosis or ulceration (Ellis 1952), and the more likely it is to produce complications involving bone, joint, or tendon sheath. Allowance, however, must be made for the natural resistance of the patient, the virulence of the invading organism, and other variable factors—e.g., the horniness of the hand, and how much it has been kept at rest. The principles of treatment are based on these assumptions and supported by the results. Penicillin reduces the length of incapacity (Pilcher et al. 1948, and many others), early treatment with penicillin allows a high percentage of cases to resolve without operation, and cases coming up late for treatment show a higher incidence of bone and

joint complications than do early ones (Lowden 1951, Bailey 1952, and others).

In paronychia two anomalies are at once apparent. Delay in seeking treatment bears no relationship to the extent of the lesion and, as a corollary to this, no relationship to the time required to heal the lesion. It is astonishing how quickly an infection in one case can spread round and under a whole nail, floating it away from the nail bed, whereas in another case of longer duration it may produce no more than a little discharge from the base or a localised pocket of pus in one corner. An analysis in this clinic of 50 consecutive cases according to their delay in seeking treatment and their healing-time after standard operations, did not show any relationship between the two. The most outstanding extremes were a case with two days' history which took thirty-four days to heal, and another which had been established for three months and healed on the eighth day. At that time (1948) an analysis of cases treated with penicillin and those treated without showed no significant differences. In this clinic in four years the average incapacity for subcutaneous infections has been reduced by nearly 40%, and for pulp-space infections by 60%, but for paronychia, until recently, by little more than 6%.

Pilcher's conception (Pilcher et al. 1948) of paronychial infection is that it starts as a subcuticular infection of the nail fold or the lateral sulcus; on this assumption he maintains that an incision into the subcutaneous tissue is not only unnecessary but also may delay healing by infecting an area not previously involved. There are, however, certain theoretical and practical objections to these views. The most practical objection in this clinic was that 107 cases treated by Pilcher's conservative operation averaged slightly longer than 116 cases treated by Kanavel's standard operation (Lowden 1952). Moreover, many cases proved at operation to be not entirely subcuticular infections, and even mainly subcutaneous infections, with well-defined paronychial pockets and small extensions or none at all under the nail; and a few had discharging sinuses through the nail fold, showing that subcutaneous tissue was most certainly involved. Those with well-defined subcutaneous abscess cavities alongside the nail fold—a type which Bailey (1952) considers rare—occur quite commonly in this clinic. In the last 34 cases at least 10 have been observed. Why some should develop in this direction, and some remain subcuticular, has not so far been determined, though one's impression is that the subcuticular type occurs predominantly in young people and children. However caused, the subcuticular ones produce a rapid spread under the nail, and pus often extends beyond the nail bed, stripping the cuticle from the finger and extending proximally towards the hand. These cases often take a long time to heal, leaving an impetiginous lesion of the finger which outlives the original lesions of the nail bed by many days.

Finally, it is unreasonable to assume that the infection is staphylococcal by the time it is first seen at a hand clinic—at least, not without further consideration. Cultures taken either at operation (if there is no discharge on first attendance) or on sight (if there is) indicate that some of our cases grow gram-negative bacilli or (what is equivalent for practical purposes) penicillin-resistant cocci. This fact, coupled with the fact that much of the administration of penicillin in earlier days was haphazard, might explain the findings that penicillin-treated cases did little better than those without it. For many months in this clinic it was not considered that penicillin therapy in paronychiæ was worth the expense.

If the results of cultures are assessed according to whether the lesion has discharged on the surface, when the culture is taken, or has remained intact, it is seen that, up to now, the penicillin-resistant organisms, when they occur, are nearly all in the former. The intact lesion is still staphylococcal or staphylococcal and streptococcal (table I). Reliance cannot be placed on figures derived from thirty swab reports, but the fact that these organisms do occur in paronychia is significant. The nature of the infecting organism cannot be correlated with the distinction in clinical behaviour described already. Most of the subcuticular lesions, whether discharging or not, remain staphylococcal. On the other hand, one at least of the *Bacterium coli* lesions was localised and subcutaneous. The original lesion is probably staphylococcal and rupture gives an opportunity (not always taken) of infection by gram-negative or other resistant organisms.

TABLE I—BACTERIOLOGICAL FINDINGS IN PARONYCHIA

Bacteria	Unruptured	Ruptured
Penicillin-sensitive:		
Staphylococcus aureus	12	8
Staph. aureus and hæmolytic streptococcus	3	3
Penicillin-resistant:		
Staph. aureus and hæmolytic streptococcus		2
Coliforms		2
Proteus	1	1

All were chloramphenicol sensitive.

RELATIONSHIP WITH PULP-SPACE INFECTION

Bailey (1952) reports 5 cases in which he described extension into the pulp space, though he remarked that they were more probably cases of pulp-space infection which pointed in the nail sulcus, having tracked alongside the phalanx. No doubt this latter process can take place and has taken place in most of the apparently combined lesions. Very rarely however, a pocket of pus in the sulcus is observed beginning to track into the pulp space. Only by very accurate observation can the classification be precise.

The situation is complicated by the fact that the inexperienced may be tempted to remove the nail in late neglected ("bag of pus") pulp-space infections. Fluctuation (an unreliable physical sign in fingers) under the nail may be detected. In these cases the pus tracks between the phalanx and the nail bed, raising nail and nail bed together; removal of the nail in such a case is mischievous (Lowden 1951).

CHRONIC PARONYCHIA

Bailey (1952) draws an arbitrary line at fourteen days and only considers the "acute" cases. It is convenient to have some such standard, but histories of septic hands are notoriously unreliable, and we have established that many long-standing cases present the same clinical features as more "acute" ones, and are cured as swiftly. Many of them, also, grow typical organisms. "Chronic" paronychia, as distinct from "late" paronychia, may more properly be assessed on its clinical appearance. It is better known to the dermatologist than to the surgeon, and, let it be confessed, often better treated by the dermatologist. The lesions are often multiple. The history is measured in weeks or months rather than days—sometimes in years. There is a little cheesy discharge. The nail fold hangs away from the nail, and the surrounding skin may be macerated. If the dermatologist fails to cure it, which is unusual, a cure may be obtained by removing the bases of all affected nails, carefully excising all loose and macerated tags of cuticle from the nail fold, and treating *daily* thereafter with Castellani's paint. The patients should be admitted to hospital because the operation may take a long time, and to operate on both hands at once is incapacitating. All affected nails should be done at one sitting, if possible, for fear of reinfection.

FURTHER DEFINITIONS

Certain other cases should be carefully distinguished from paronychia. The terminal pulp-space infection with distal subonychial localisation is probably a clinical entity (Bailey 1952). It is usually included in analyses of pulp-space infections and seldom spreads as far as the nail fold or sulcus.

It is sometimes a little difficult to decide whether foreign bodies under the nail should be included, because they often suppurate, and sometimes a typical paronychial infection is said to have begun when a sliver of wood was run under the nail and removed at home. On the other hand, practically every case of foreign body under the nail that is seen and treated promptly heals without any spreading sepsis—even those with pus round the foreign body—and these cases present none of the problems referred to above. I have therefore omitted them.

COMPLICATIONS

Circulatory inadequacy is not a complication of paronychia, but is an important predisposing condition and a condition operating against satisfactory results. The refractory cases of paronychia occur mainly in the winter months, and it therefore appears probable that inadequate circulation in the fingers may operate to some extent in many cases. In the aged, in those with Raynaud's phenomenon, and in small children (who have insufficient wit to keep their fingers warm) it may be of considerable importance. I have seen 2 cases of gangrene of the finger, and 3 of the great toe, provoked by operations for paronychia. It is perhaps insufficiently realised that many cases will recover in due time without any operation, and that in any case a chronic paronychia is better than a gangrenous digit. Unless, therefore the first two of these three classes respond to 'Priscol,' it may be wiser to leave them alone. If they are operated on they benefit by admission to the warmth of a ward for two or three days.

Suppurative Arthritis.—Bailey (1952) reports 1 case in a series of subcutaneous infections. In 1947 this clinic had 2 cases from paronychia caused, I believe, by too extensive reflections of the nail fold. Since then there have been no cases attributable to paronychia. The usual cause of this (fortunately rare) complication is a dorsal subcutaneous infection, which, if distal, may closely simulate a paronychia and may later discharge into a nail fold while it is infecting the joint. Joints already afflicted with chronic arthritis are particularly susceptible to secondary suppuration from adjacent inflammation; they require special care and an especially conservative approach.

Osteitis of Phalanx.—There has been no case of bony disease secondary to paronychia in the last five years. Paronychia and bony disease may coexist as twin complications of pulp-space infection in very rare cases.

Stiffness of Joint.—Some digital infections produce a sympathetic effusion into the adjacent interphalangeal joint. If the suppuration heals rapidly, the effusion may prolong incapacity. If the lesion is slow to heal, the effusion has usually disappeared before the patient returns to work. This condition must obviously be related to the complication of suppurative arthritis, but both are more commonly associated with dorsal subcutaneous and hair-follicle infections.

Strictly speaking, therefore, there should be no complications of paronychia, though it is important to discuss the foregoing conditions, if only to dismiss them.

CAUSES OF DELAYED HEALING

In a clinic where unsupervised house-surgeons, as well as a junior casualty officer, are responsible for many of the operations, some of those cases which fail to heal promptly must be attributed to faulty surgery. This is particularly so in the surgery of paronychia, because, if it is decided to remove a nail, failure to remove the amount of nail decided on prolongs the healing-time. Bailey (1952) remarked that the original advice given in 1948 (to remove only that portion of the nail raised by infection) had been superseded by a decision to remove the whole width of the base at least, and there is no doubt that, if no incision is made, this change of policy is sound. Small pieces of nail inadvertently left behind, or cut edges covered by the nail fold, are a common cause of persistent discharge and further spread of infection.

Where incision into the nail flap is indicated, faulty siting gives bad results. If it is intended to drain a sulcus, the incision should lead down to it unerringly. Meticulous precision in operating brings its own rewards.

Pilcher et al. (1948) have already emphasised the error of wholesale removal of adherent and unaffected nail, and their influence has spread so widely that one can say theirs has become the accepted method of treatment. Nevertheless one occasionally still sees cases where a whole nail has been unnecessarily removed and a granulating ulcer of the nail bed results. The avulsion of a normal, or mainly normal, nail almost inevitably means at least eight days' incapacity.

ASSESSMENT OF RESULTS

Bailey's (1952) review assesses the cases in his clinic from the day of onset to the day of discharge, and he maintains that this is the most reliable method of estimating the length of industrial incapacity. At a teaching centre it is regarded as part of their own responsibility to get the cases in early. Nevertheless all clinics have to acknowledge that some of their cases attend much later than is good for them, and all clinics should endeavour to keep the proportion as low as possible. This clinic often finds that delay in attendance is associated with delay in giving up work, and that many a patient regards *being operated on* for a septic hand (rather than contracting a septic hand) as the cause of his incapacity. It seems, too, from Bailey's figures, that the average period of delay is considerably less in London than in this area, though it must be repeated that he discards all cases with delay of over a fortnight. In the series about to be cited the average delay was 7·6 days, including 6 cases in which it was two or three weeks. In this area patients are astonishingly vague in their ideas about how long their trouble has been going on. Further, in paronychia the period of delay is no measure of the anatomical situation, and only in the broadest sense a measure of the bacteriological situation. Under present conditions patients who attend one day may be referred for operation to the next, a few patients benefit by twenty-four hours' delay, and one or two may be under treatment for two or three days before it is decided (usually by someone else) that operation is indicated. For all these reasons it has been considered profitable to report results in two ways: by assessing the period of incapacity from the day of first attendance, and by assessing the postoperative period of incapacity in addition. Other principles adopted in calculating results have already been set out in a report on pulp-space infection (Lowden 1951).

Conditions of work, both for patients and for doctors, vary so much from one part of the country to another that I place very little store on comparisons between one clinic and another. The only reliable evidence that one's routine of treatment is successful is a comparison with one's own results in previous years. Seasonal variations in incidence and response to treatment make it advisable that these results should be assessed against a corresponding season in previous years, or against other

cases treated by standard methods in the period of investigation.

THE INFECTING ORGANISM

The old doctrine that "if you take care of the gram-positives, the gram-negatives will take care of themselves" dies hard. It has already been shown (table I) that penicillin-resistant organisms play some part, and the opinion has been given that these occur mainly in lesions which have been discharging before they come for treatment. We have often observed also that, if any of the factors mentioned above has operated and there is any delay in healing, a penicillin-sensitive organism is superseded by, or changes into, a penicillin-resistant one. This is in line with findings by other workers on other types of wound (Summers 1952) and nowadays is to be expected. Secondary infection in hospital, even if staphylococcal, is very often penicillin-resistant.

On all counts, therefore, the first day or two in the treatment of paronychia are the crucial ones, and it is essential, to obtain consistently good results, that treatment shall be prompt, surgery shall be precise, and other ancillary forms of therapy shall be overwhelmingly effective. This forbids one to wait for a bacteriological report before defining treatment.

The data we have accumulated lead us to suppose that the infection is probably penicillin-sensitive, but may not be so; and that it is almost certain to be sensitive to chloramphenicol.

ROUTINE

In this clinic I am not yet prepared to use chloramphenicol systemically for the routine treatment of septic hands, because a penicillin routine is still proving outstandingly successful in over 95% of cases, because oral exhibition is unreliable in outpatients, because of expense, and because of the possible side-effects of chloramphenicol (*Lancet* 1952). Nevertheless the topical use of chloramphenicol, reported as being highly successful in other wounds (Flint et al. 1952), offers a means of attacking those which might defy the penicillin.

Ellis (1951) reported his observations on high initial penicillin dosage, and he used it in the treatment of paronychia (Ellis 1952). He reports 90 to 95% four-day cures by incising alongside the nail fold, evacuating all pus, and putting a dry dressing over the incision. He does not remove any nail. In the localised unruptured cases this appears eminently reasonable; but, since there is a considerable incidence in this area of cases with extensive subcuticular spread ("run-arounds" and "floaters") and of ruptured lesions already possibly insensitive to penicillin, I have been led to use topical chloramphenicol, after removal of detached nail, in addition to penicillin in cases which are unlocalised or are discharging.

In this way one hopes to anticipate a gram-negative infection while treating for a lesion still predominantly penicillin-sensitive.

The routine operative treatment now adopted may therefore be summarised as follows:

(1) All cases have high preoperative penicillin dosage, part of which, at least, is readily absorbed aqueous penicillin G, and further penicillin on the first postoperative day.

(2) Unruptured well-localised lesions have a small precise incision alongside the nail fold. The pus is evacuated, the adjacent nail raised, and any pus dried out, but no nail removed. A dry dressing is applied and inspected on the second or third postoperative day (the "Ellis" operation).

(3) Ruptured paronychia, or those with much subcuticular spread, have Pilcher's operation and are dressed with a wick of chloramphenicol (5%) in propylene glycol. Subsequent dressings of the same may be required on one or two occasions.

(4) All cases not obviously healthy and healing on the third or fourth day are treated by a toilet of the nail fold and with chloramphenicol drops two or three times weekly.

TABLE II—RESULTS OF TREATMENT OF PARONYCHIA

Operation	No. of cases	Incapacity (days)	Postoperative attendance (days)	No. of cases lasting more than 7 days	Longest healing-time (days)
Ellis (penicillin only) ..	20	5·0	4·75	2	11
Pilcher (penicillin and chloramphenicol)	27	5·0	4·5	2	11
Resolution without operation	4	4·2	—	—	5
Others (Pilcher with penicillin only)	7	8·7	8·7	4	13
Total	58	5·4*	5·1	—	—

* The average incapacity for all cases treated in the corresponding months in 1951 was 11·4 days and in 1950 12·8 days.

It has not been considered necessary to describe or to tabulate all the cases for this report. Note is taken of the type of lesion, and it is put into one of three classes. Bacteriological examination was made in many of the cases (table I). The results shown in table II include all cases coming up for treatment in an unbroken series (except 2 cases in which operation was refused), and no "mitigating circumstances" or "excuses" have been accepted. They include operations by one surgeon, two registrars, and five or six house-surgeons, according to chance. Seven operations done by others not briefed for the experimental period have been included but assessed separately from the foregoing.

CONCLUSION

The table of results is self-explanatory. We have adopted as a routine the principles defined in the later part of this paper. Although the periods of incapacity for the two methods seem to be the same, there is a place for both. Ellis's operation is followed by a more comfortable postoperative course and a quicker return to an uncovered finger, because no nail has been removed; it will be found applicable to a larger proportion of cases than the 30% reported. Nevertheless, a short series of cultures indicates that 15–20% of cases of paronychia may resist the use of penicillin; this incidence is higher than for other septic conditions of the hand. Ellis's operation on an insensitive infection will probably fail. The use of local applications of chloramphenicol, instead of penicillin lactose, with Pilcher's operation, seems to have prevented the occurrence of those refractory cases which previously kept the average high. As a result the recovery period for all cases has been reduced by half.

I have already recorded my constant debt to the nurses and to a succession of enthusiastic residents for their continued interest in the Hand Clinic. I must further pay grateful tribute to Dr. James Wilson and his department of pathology for their bacteriological work, and to record an acknowledgment of the work of Prof. Pilcher and Mr. David Bailey, and of Mr. Maurice Ellis at the General Infirmary at Leeds, whose progressive ideas are a constant stimulation.

REFERENCES

Bailey, D. (1952) *Lancet*, i, 167.
Ellis, M. (1951) *Ibid*, i, 1038.
— (1952) *Ibid*, i, 613.
Flint, M. H., Gillies, H., Reid, D. A. C. (1952) *Ibid*, p. 541.
Lancet (1952) i, 550.
Lowden, T. G. (1951) *Lancet*, i, 196.
— (1952) *Ibid*, i, 262.
Pilcher, R. S., Dawson, R. L. G., Milstein, B. B., Riddell, A. G. (1948) *Ibid*, i, 777.
Summers, G. A. C. (1952) *Ibid*, i, 135.

A HÆMORRHAGIC STATE RESEMBLING HÆMOPHILIA

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THE diagnosis of hæmophilia depends on a family history showing a sex-linked recessive inheritance, on clinical evidence, and on certain laboratory findings. But, because of the high mutation-rate and the high death-rate among young hæmophilics, the family history is often absent or inconclusive. Moreover, the clinical features are merely those associated with defective blood coagulation, and are not specific for hæmophilia. Consequently, the diagnosis often rests entirely on the laboratory findings.

Merskey (1950) studied the laboratory diagnosis of hæmophilia in some detail, and he has shown that the most satisfactory laboratory test is the demonstration that the patient's plasma does not correct the clotting defect of the plasma of a "known hæmophilic"—that is, a patient in whom the required genetic, clinical, and laboratory criteria are fulfilled. Small amounts of normal plasma and of the patient's plasma are added to citrated plasma from the known hæmophilic, and the clotting-times after recalcification are recorded. Very small proportions of normal plasma will shorten the calcium clotting-time of hæmophilic plasma almost to normal. If similar proportions of the patient's plasma fail to do so, he presumably has hæmophilia. This test has the advantage of being independent of the nature of the defect in hæmophilia; it simply shows that two patients have the same deficiency. The purpose of this article is to describe a case in which the usual laboratory findings supported a diagnosis of hæmophilia, but in which the patient's plasma corrected, and was corrected by, the plasma of other known hæmophilics.

CASE-REPORT

N.J. is a five-year-old boy in whom a tendency to excessive bleeding has been observed since the age of 3 months. He bruises very easily, and his ankles and knees have been swollen ever since he started to walk. There is no convincing family history, but his mother was one of the possible hæmophilic carriers who were found by Merskey and Macfarlane (1951) to have an unusually high prothrombin consumption index (37%).

His admission to hospital with severe epistaxis and hæmorrhage into the muscles of the thigh provided an opportunity to study his condition more fully than had been done before. His bleeding-time, and the tourniquet test, platelet-count, and one-stage prothrombin-time were normal. The whole-blood clotting-time was 52 minutes (Lee and White) and 10½ minutes (Dale and Laidlaw). The prothrombin consumption index was 150%. His plasma did not progressively lengthen the clotting-time of normal plasma, so it was presumed that no anticoagulant was present. The results of mixing his plasma in different proportions with the plasma of 3 undoubted hæmophilics is shown in the accompanying table.

CLOTTING-TIMES OF RECALCIFIED MIXTURES OF THE CITRATED PLASMA OF THE PATIENT N.J. AND 3 UNDOUBTED HÆMOPHILICS, J.D., A.N., AND F.N.

0·1 ml. of:	Clotting-time (min.) after adding 0·1 ml. of plasma from:			
	N.J.	J.D.	A.N.	F.N.
Normal saline ..	40	20	17	22
1 : 100 normal plasma ..	6½	4½	4	3¼
1 : 100 N.J.'s plasma ..	—	4½	8	4¼
1 : 100 J.D.'s plasma ..	6¾	—	16¾	21
1 : 100 A.N.'s plasma ..	4½	16	—	19
1 : 100 F.N.'s plasma ..	5½	16	14½	—

DISCUSSION

The discovery of this case raises a serious difficulty in the definition of hæmophilia. By the usual criteria, the boy would be confidently classified as a hæmophilic. But if we accept him as having hæmophilia, then we must postulate mutually correcting subgroups of hæmophilia, and abandon the idea of excluding hæmophilia by demonstrating correction of a known hæmophilic's plasma. However, among the considerable number of patients studied by Merskey no instance was found of two supposedly hæmophilic plasma samples correcting one another. Merskey's series included J.D. and A.N., 2 of the 3 patients whose plasma is shown here to correct and be corrected by N.J.'s plasma; clearly, therefore, it is N.J. who is anomalous.

The clotting defect in N.J. was subsequently investigated more fully by Biggs et al. (1952), and other patients with a similar defect have been found. Cases of this type have been shown to be deficient in a factor present both in normal plasma and in the plasma of patients belonging to the group which includes J.D., A.N., and F.N. Furthermore, N.J. and the other patients resembling him are not deficient in antihæmophilic globulin. Thus these two hæmorrhagic disorders, similar in their clinical features and in most laboratory findings, are in reality distinct from the point of view of their coagulation defects. Patients like N.J. seem to be comparatively rare, and it is therefore suggested that the term hæmophilia should be restricted to the larger group, in which plasma samples fail to correct each other, and which evidently includes the large majority of cases hitherto classified as hæmophilia. N.J. and other patients with his defect should be regarded as having a different disease for which Biggs et al. (1952) suggest the name "Christmas disease" after the name of the first patient they examined in detail.

REFERENCES

Biggs, R., Douglas, A. S., Macfarlane, R. G., Dacie, J. V., Pitney, W. R., Merskey, C., O'Brien, J. R. (1952) *Brit. med. J.* ii, 1378.
Merskey, C. (1950) *J. clin. Path.* 3, 301.
— Macfarlane, R. G. (1951) *Lancet*, i, 487.

RETURN OF LIVER FUNCTION TESTS TO NORMAL AFTER RELIEF OF OBSTRUCTION IN CHRONIC BILIARY CIRRHOSIS

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THE opportunity of following a patient with biliary obstruction for a reasonable length of time before and after operation seldom arises. The interest of the present case lies in the serial liver-function tests (see table). In view of the severity of the liver damage the restoration of function following the relief of obstruction was surprising, especially since the patient was aged at least 55.

The patient (record no. 3647/48) is well known at the London Hospital. She was born in Russia about 1893. Her exact age is uncertain because all her papers were lost when she came to England in 1900. She was married in 1927 and has two children who are now grown up and married. Her husband died of cancer in 1936, and since then she has lived with a niece.

Her first visit to the London Hospital was in 1929, when she underwent hysterectomy for fibroids and a leiomyosarcoma was found. In 1937 she was admitted with an appendix abscess. In 1945 she attended the gynæcological department with a pelvic tumour which was thought to be possibly a metastasis from her leiomyosarcoma. Since she refused operation she was given intensive deep X-ray therapy (3400r).

In December, 1945, six months after the conclusion of her X-ray therapy, the first symptom developed which could possibly be ascribed to the biliary tract. She had a severe attack of vomiting, which was diagnosed by her doctor as gastritis. In June and October, 1946, there were further attacks of nausea and vomiting. During the second attack

LIVER-FUNCTION TESTS

Date	van den Bergh (mg. of bilirubin per 100 ml.)	Alkaline phosphatase (K.A. units)	Thymol turbidity (units)	Cephalin cholesterol flocculation	Serum-colloidal gold	Total plasma-protein (g. per 100 ml.	Albumin (g. per 100 ml.)	Globulin (g. per 100 ml.)
Normal	*0–1*	*3–13*	*0–4*	*No flocculation*	*No precipitation*	*6–8*	*60–70 % of total*	*30–40 % of total*
July 6, 1948	10·0	46·0	24·0	3	4	7·0	2·9	4·1
,, 17 ,,	3·6	42·0	25·0	3	4	8·0	3·0	5·0
,, 27 ,,	7·5	43·0	20·0	4	5	8·5	3·2	5·3
Aug. 4 ,,	6·2	34·0	20·0	3	5	8·0	3·1	4·9
,, 24 ,,	4·0	49·0	18·0	4	5	8·6	3·1	5·5
Nov. 12 ,,	11·0	43·0	18·0	3	4	7·4	3·6	3·8
May 3, 1949	10·2	34·0	22·0	4	5	6·7	2·9	3·8
,, 7 ,,	Removal of gall-stone from common bile-duct							
,, 20 ,,	8·9	29·0	20·0	4	5	6·6	3·2	3·4
June 28 ,,	2·6	27·5	19·2	4	5	6·6	3·0	3·6
Dec. 2 ,,	1·4	23·5	15·2	4	5	6·9	3·9	3·0
Nov. 20, 1951	1·4	16·5	7·0	1	1	6·6	3·9	2·7

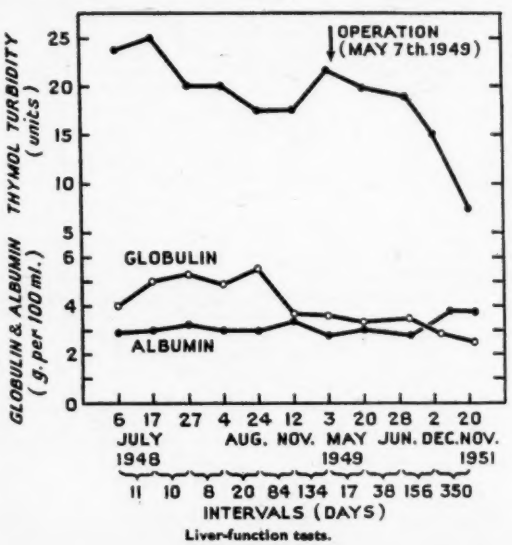
she had upper abdominal pain for two days. In March, 1947, she was seen in a follow-up department, and a note was made that the pelvic mass was unchanged. At this time she was still complaining of epigastric pain from time to time.

In June, 1948, the niece with whom she lived wrote to say that her attacks were now very frequent, that her face was a ghastly yellow, and that she looked very aged. She was seen in the radiotherapy follow-up clinic and found to have considerable enlargement of the liver and spleen as well as deep jaundice. There was some doubt about the diagnosis of metastases, and she was referred to the medical unit for further investigation. A straight radiograph showed no evidence of gall-stones, and a blood-count showed Hb 70%, 3,890,000 red cells per c.mm., and 6400 white cells per c.mm. (polymorphs 70%). On July 16, 1948, she was admitted under the care of the medical unit with a provisional diagnosis of hepatitis. Examination showed a grey-haired woman with xanthoma below the eyes. There was deep jaundice. The liver and spleen were enlarged, and the gall-bladder was not palpable. Her blood-pressure was 200/100 mm. Hg, and the urine contained bile.

During the next four weeks she had four attacks of right subcostal pain with nausea and flatulence, but with no increase in the jaundice. After this she improved; the jaundice decreased, and the stools became coloured.

Ten months later, on May 2, 1949, she was again admitted after several severe attacks of biliary colic. Her condition was much the same as on the previous admission, except that she now had severe pruritus and was feverish and sweating. On May 7, 1949, she was transferred to the surgical unit and two large gall-stones were removed, one from the common bile-duct, the other from the gall-bladder. There was pus in the gall-bladder and in the bile-ducts. The liver was enlarged, and its surface was nodular; the tissue was friable and bled easily. The spleen was enlarged, and the portal-vein tributaries were greatly distended. There was no ascites. It was thought wise not to take a biopsy specimen. Recovery following operation was satisfactory, but shortly after discharge the patient had to be readmitted with pyrexia. This was considered to be due to cholangitis; it responded well to treatment with antibiotics.

Follow-up.—The patient is somewhat temperamental, and it was difficult to persuade her to attend the follow-up clinic again. In response to several requests she attended on Nov. 20, 1951, when she was of a good colour, very energetic, and eating well. She said that her bowels were a little looser since the operation. The xanthoma under the eyes was thought to be less pronounced. The accompanying table and figure show the completeness with which liver function has apparently returned to normal.



Liver-function tests.

Reviews of Books

Ciba Foundation Colloquia on Endocrinology

Vol. 4. Anterior Pituitary Secretion and Hormonal Influences in Water Metabolism. Editor: G. E. W. WOLSTENHOLME, O.B.E., M.A., M.B., assisted by MARGARET P. CAMERON, M.A., A.B.L.S. London: J. & A. Churchill. 1952. Pp. 591. 45*s*.

THIS volume is the largest of the four Ciba Foundation Colloquia on Endocrinology so far published, and like the others it includes two separate symposia.

The larger and more recent of these was devoted to the anterior-pituitary gland and was noteworthy for the number of outstanding authorities who participated. They covered the anatomical, histological, and cytological aspects, including the cytochemical localisation of pituitary protein hormones, and the controversial question of the secretory innervation of the glandular cells of the hypophysis. One session dealt with the hypothalamic control of the secretory function of the hypophysis, many of the contributions being concerned with the mechanism of A.C.T.H. release. A paper on *p*-hydroxypropiophenone (which some believe specifically affects certain pituitary functions) heralds further studies of chemical control of pituitary function. The rest of the sessions dealt with the physiology and biochemistry of the six known anterior-lobe hormones. The whole is a fascinating record of recent research.

At the second conference, less ambitious in scope, the theme of hormones and water metabolism revealed the great advances in our knowledge of the relation of steroid hormones and hormones of both pituitary lobes to fluid and electrolyte metabolism. The adrenal cortex is a ubiquitous participant in a bewildering variety of metabolic functions.

This volume is impressive testimony to the excellent work of the Ciba Foundation in promoting an exchange of up-to-date information between workers in various countries. Moreover, it is a well-made book. The records of the discussion following each paper must have undergone some editing, for they are neither disjointed nor scrappy, but they nevertheless preserve the vivid atmosphere of informality aimed at by the organisers of the colloquia.

The Mechanisms of Disease

A Study of the Autonomic Nervous System, the Endocrine System, and the Electrolytes in their Relation to Clinical Medicine. JOSEPH STAMBUL, M.D., chief, cardiovascular dept, Albert Einstein Medical Center (Eastern Division); cardiologist, Deborah Sanatorium. New York: Froben Press. 1952. Pp. 746. $15.

IN Augustine Birrell's *Obiter Dicta* we read that Borrow's *The Bible in Spain* gained admission to the narrowly selected reading-matter of the Victorian Sabbath by virtue of its "dear deluding title." This is partly relevant to the volume under review, in that the title is deluding, and the book is dear. The practitioner or teacher of medicine, to whom the book is commended in the foreword, would, we believe, expect an attempt to explain disease processes in terms of generally accepted physiology and pathology, but Dr. Stambul offers something very different.

His central theme is that our preoccupation with the physiology and pathology of organs has blinded us to the importance of cell biology: disease processes, he thinks, can be best understood in terms of alterations in cell permeability, brought about by autonomic nervous impulses, by hormones, or by changes in electrolyte concentration in the surrounding fluids. With this hypothesis in mind, he embarked on a long search of the literature, whose results are presented in this massive volume. Many of his conclusions are surprising: for instance, "bacterial toxins affect tissue cells by way of the autonomic nerve fibres that supply these cells"; "the degree of effectiveness of a diuretic depends upon the ease which which it ionises calcium"; "the hormone of the pancreas, insulin, influences the deposition of glucose in the muscle cells by counteracting the membrane semipermeability and permitting the glucose from the surroundings to enter the cells." These are matters of theory; but they are less astonishing than his assertion that adrenal cortical hormone therapy "should be instituted early in acute infections in order to prevent irreparable damage to the tissues, caused by pathogenic micro-organisms."

The clarity of the writing makes apparent the highly speculative nature of the contents.

Saving Children from Delinquency

D. H. STOTT, PH.D., research fellow, Institute of Education, University of Bristol. London: University of London Press. 1952. Pp. 266. 12*s*. 6*d*.

IT is an unfortunate feature of human psychosymbolism that rational proposals for the prevention of crime are less effective in exciting our public, our press, and our judges than sadistic methods of punishing it. Dr. Stott's Carnegie study on *Delinquency and Human Nature* was a humane and hard-headed study of child criminals, praiseworthy for both its good sense and its psychological eclecticism. His new book is of wider scope in suggesting remedies. The commonest cause of delinquency, in his view, is desperation: child crime is essentially an explosive disorder. The Bench, or some of its members at least, are likely to welcome the book, for it provides a background to every decision which has to be made in a case of childhood delinquency, and gives a remarkably accurate idea of the sort of help in elucidation and treatment which can be expected from sensible psychiatry. The roots of the desperation which Dr. Stott cites lie deeper in our culture pattern than his non-anthropological approach seems to suggest; but the programme of prevention and treatment he outlines is practicable if our society is culturally able to accept it.

There have been other good books of this kind, but few better. Dr. Stott writes persuasively out of a very wide personal experience.

Physical Diagnosis

HARRY WALKER, M.D., F.A.C.P., professor of clinical medicine, Medical College of Virginia. London: Henry Kimpton. 1952. Pp. 461. 60*s*.

TEXTBOOK instruction on methods of physical examination is never an easy task, for these are essentially practical arts, to be taught at the bedside. In this volume one of the main aids to a clear understanding of clinical methods—namely, the use of illustrations and diagrams—is disappointing. Of the 126 illustrations, some seem to be of little importance and inferior quality. The descriptions of physical signs are also often brief and uninformative. Some 30 chapters cover all the principal diseases and there are introductory chapters dealing with such things as habitus, body-temperature, speech, gait, general inspection, and palpation. There is an exceedingly good short account of methods of psychiatric examination.

Scoliosis

Pathology, Etiology, and Treatment. SAMUEL KLEINBERG, M.D., assistant orthopædic surgeon, Hospital for Joint Diseases, New York City. London: Baillière, Tindall, & Cox. 1951. Pp. 286. 57*s*. 6*d*.

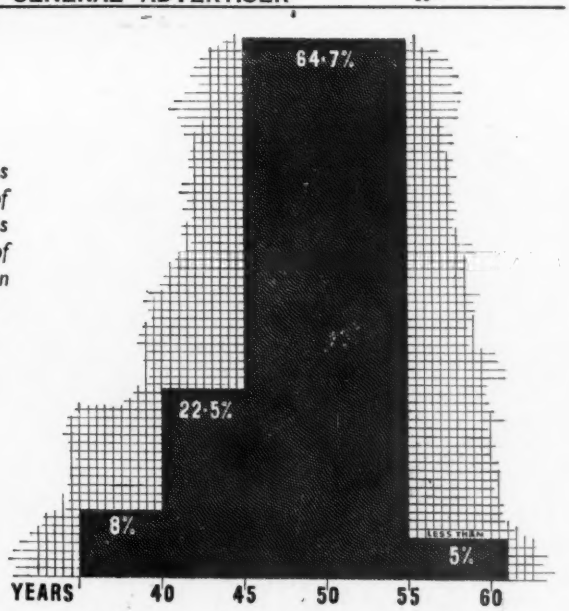
AN orthodox review of the anatomy of the spine and the different types of lateral curvature leads the author to conclude that the ætiology of idiopathic scoliosis remains an unilluminated page; but he is impressed with the evidence implicating asymmetrical disturbance of vertebral epiphyseal growth in some cases, and he foresees future treatment of established curves by surgical inhibition of growth on the convex side, either by stapling or by other means. He does not mention how greatly the prognosis differs in the different sites of curvature, and attaches little importance to the exact measurement of curve angles, preferring the simple visual comparison of serial radiographs. Neither does he share current pessimism on the value of non-operative management in structural scoliosis; exercises, in particular, are described in detail, though he does not assert dogmatically that these can undo rotation, and does not refer to the specific derotating exercises used by some experienced physiotherapists. There is a full account of methods of forcible correction, plaster technique, and apparatus; and, though Dr. Kleinberg is conservative in advising operation, his success in obtaining fusion with preserved beef bone makes one wonder whether a "bone bank" of refrigerated homogenous bone is really necessary.

Surgical Papers

WILLIAM STEWART HALSTED, late professor of surgery, Johns Hopkins University. Editor: WALTER C. BURKET. Baltimore: Johns Hopkins Press. London: Oxford University Press. 1952. Two vols. Pp. 586 and 603. £10.

A PART of the centenary celebrations, held last year at Johns Hopkins Medical School, of W. S. Halsted's birth is the re-issue of his collected writings. Vol. I of these contains his papers on surgical technique, conduction anæsthesia, intestinal surgery with special regard to methods of anastomosis, the surgery of the blood-vessels, and some shorter contributions on miscellaneous subjects. Vol. II contains his work on cancer of the breast, the surgery of the thyroid, parathyroid, and thymus glands, the surgery of the bile-ducts and pancreas, some miscellaneous papers, and a bibliography.

Halsted's papers are models of what scientific papers should be—lucid, well documented, and bearing evidence of the most intensive work and study in their preparation. Apart from their presentation, they contain a mass of original observations which are still pertinent; many of these are still not widely known. The general principles enunciated are continually illustrated in his writings, and they are the same now as they were in his day. We cannot be reminded too often of the importance of gentle handling of the tissues, exact hæmostasis, and the sacrifice of theatrical operating to care and thoroughness. His insistence on the importance of applying the resources of the laboratory and the teachings of surgical pathology to clinical problems is an object-lesson. The papers in vol. I are perhaps of less interest than those in vol. II except for the remarks on surgical technique and ligation of the large arteries. Much of the elaborate work on intestinal suture is of historical interest only, and he wrote very little on his classical contribution to local anæsthesia. Vol. II contains his wonderful papers on cancer of the breast, which could be read with profit by any surgeon who operates on this condition nowadays. The paper on the operative story of goitre, finishing with details of the Halsted technique, beautifully illustrated, is absorbingly interesting. His remarks on the training of the surgeon are as apposite as they were in 1904.



Graph showing percentages of average age of onset of menopause, drawn from figures compiled by the Council of Medical Women's Federation in England.

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THE LANCET

LONDON: SATURDAY, JAN. 17, 1953

Measles Encephalitis

THE biennial epidemic of measles is in full swing; in England and Wales weekly notifications have reached the 30,000 mark. Encephalitis seems to be especially liable to complicate measles during epidemics of the disease [1 2]; its incidence during epidemics has been approximately estimated at 1 per 1000 cases admitted to hospital.[1 3–8] There seems to be no correlation between the severity of the attack of measles and the liability to encephalitis; so a substantially similar incidence of encephalitis is to be expected among cases treated at home. Yet verified cases of post-measles encephalitis notified in the years 1950 and 1951 numbered only 73 out of a total of 983,900 notifications of cases of measles. It seems likely, therefore, that the reporting of acute encephalitis under the 1949 Regulations has not yet got into its stride, and that many cases, possibly mild, are not being notified.

Measles encephalitis belongs clinically and pathologically to the group of post-infectious encephalitis. This group also includes the encephalitis that may follow vaccinia, smallpox, chickenpox, rubella, occasionally mumps, and other virus infections. It usually appears suddenly and unexpectedly when the rash has just subsided leaving staining of the skin—that is, about the 3rd post-eruptive day. It may start, however, at any time between the 4th and the 14th days of the disease or, very rarely, in the pre-eruptive stage.[9] In one series of 74 cases the age-distribution ranged from 14 months to 35 years [7]; but about half the cases are in children aged 5–8 years.[6] The fatality-rate varies from 10 to 30%. The earliest histological lesion, according to APPELBAUM and his colleagues,[7] is cellular infiltration of the adventitia of small and medium veins in the grey and white matter of the brain. In cases where neurological symptoms have been present more than 3 days before death there are, in addition, perivascular demyelination, infiltration of the demyelinated areas with microglial cells, and small areas of softening in the white matter. Usually there is also significant cellular degeneration, and many ganglion cells may be missing. Such changes have been interpreted as inflammatory; and in one case virus was recovered from the brain of a child who died of post-measles encephalitis 9 days after the rash appeared.[10] The alternative interpretation of these changes is that they are an allergic response to the virus of measles; and for this view there is much weighty evidence.

The clinical course is very variable and may include cortical, brain-stem, myelitic, and meningeal signs. Fortunately, in the great majority rapid recovery sets in after 2–3 days of pyrexia, coma, convulsions, or other central nervous disturbance. When coma and other symptoms continue longer, neurological recovery is usually slower; but recovery is progressive and, with some exceptions, virtually complete after weeks, months, or years according to the extent of the damage. The potential reversibility of all the lesions has been emphasised by JENNINGS,[11] who showed in particular that blindness almost always clears up although it may take some years to do so. The electro-encephalogram (E.E.G.) during the acute stage shows gross high-voltage slowing in all leads; judged by the E.E.G., recovery is slower than the apparent clinical recovery, and it is not always complete even after 4 or 5 years.[12]

The ultimate prognosis has now been further examined in a psychological follow-up study by MEYER and BYERS [13] of 16 cases treated in the Children's Hospital, Boston, between 1943 and 1949. This reveals that abnormalities of mental function can be demonstrated by appropriate psychological tests in a high proportion after neurological and E.E.G. evidences of the disease have cleared. Easy fatigability of intellectual function and defects in attention, in perceptual-spatial organisation, and in learning capacity tend to persist for months, or even permanently, in about a third of the children—usually those who have had a long acute stage. When such psychological defects persist the child has difficulty in acquiring new knowledge, and consequently his intelligence quotient falls gradually over the years. His defective powers of adaptation tend also to produce emotional stress and either a retreat into himself or aggressive rebellion. Such children need to be handled tactfully, affectionately, patiently, and with due allowance for their mental disabilities; they must not be pressed either in school or in the home. The outcome is influenced by age at the time of the attack. Older children, because of their more elaborate foundation, are more likely to remain competitive despite incomplete intellectual recovery than are younger children who must acquire their fundamental learning with defective tools. MEYER and BYERS have stated a good case for detailed psychological assessment of cases of encephalitis where the patient, after apparent recovery, shows behaviour difficulties, personality change, or some loss of intellectual capacity. Thereby a way of life may be planned which will diminish anxiety and tension and improve behaviour.

1. Peterman, M. G., Fox, M. J. *Amer. J. Dis. Child.* 1933, **46**, 512.
2. Reisman, H. A., Rosen, A. S. *Ibid*, 1943, **66**, 597.
3. Hoyne, A. L. *Illinois med. J.* 1939, **76**, 136.
4. Geiger, J. C., Sappington, E. E. *Arch. Pediat.* 1940, **57**, 313.
5. Litvak, A. M. *Ibid*, 1947, **64**, 507.
6. Sawchuk, S., LaBoccetta, A. C., Tornay, A., Silverstein, A. Peale, A. R. *Amer. J. Dis. Child.* 1949, **78**, 844.
7. Appelbaum, E., Dolgopol, V. B., Dolgin, J. *Ibid*, **77**, 25.
8. Banks, H. S. The Common Infectious Diseases. London, 1949; p. 103.
9. Wyllie, W. G. *Proc. R. Soc. Med.* 1934, **27**, 1425.
10. Shaffer, M. F., Rake, G., Hodes, H. L. *Amer. J. Dis. Child.* 1942, **64**, 815.
11. Jennings, G. H. *Lancet*, 1952, ii, 66.
12. Jacobson, E., Holmgren, B. *Ann. pædiat.* 1949, **173**, 231.
13. Meyer, E., Byers, R. K. *Amer. J. Dis. Child.* 1952, **84**, 543.

Epidemiology in Reverse

When KOCH announced his famous postulates the ætiological agents of most infectious diseases were unknown. Now that these have been satisfactorily established for nearly all infectious diseases, a new situation has arisen: viruses are being discovered without diseases to match. To the pure bacteriologist this may seem natural enough, for the great majority of bacteria are harmless or even beneficial saprophytes and the pathogen is very much the exception. But those who work with viruses have learnt to recognise them by their ability to produce disease, and a scientist who isolates a new virus without knowing the disease it causes is looked at askance by his colleagues. Let him beware, however, of the temptation to short-circuit KOCH's postulates, either in letter or in spirit, in his anxiety to find a parent disease for his foundling.

A good example of this epidemiology in reverse comes from the Coxsackie viruses. During investigations on poliomyelitis, DALLDORF and SICKLES [1] isolated from the stools of two children with paralysis a virus which in suckling mice caused fatal disease with widespread muscular necrosis. They proposed the name Coxsackie virus for this new agent, but it was not immediately obvious what disease it caused. Some 15–20 serological varieties of Coxsackie virus have now been recognised and they have been accused of causing many diseases. It seems likely that they are responsible for epidemic pleurodynia [2] (Bornholm disease), herpangina,[3] and certain non-specific summer febrile disorders.[4] Their distribution is very similar to that of poliomyelitis viruses and their relation to this disease is intriguing. There is still no evidence that they cause poliomyelitis-like diseases alone, but some varieties may convert a subclinical attack of poliomyelitis into a paralytic one. Coxsackie viruses seem to be extraordinarily widespread; they have been recovered in large numbers from the four corners of the earth, and their association with human disease may be the exception rather than the rule.

Epidemiology in reverse has also been encountered in East Africa. A group of workers in Entebbe, Uganda, while looking for reservoirs of yellow fever, inoculated various materials into mice and recovered a number of curious viruses. This led to a search for the corresponding diseases. Dr. G. W. A. DICK, who for some years was a prominent member of the team, described some of the results in a lecture to the Royal Society of Tropical Medicine and Hygiene on Dec. 11. Two of the agents discovered by these workers in East Africa—Bwamba fever [5] and West Nile [6] viruses—were isolated from the sera of patients with febrile disease, although the exact relation of these viruses to human disease is still not clear. Most of the other viruses—for example, Uganda S [7]—were isolated by inoculating suspensions of mosquitoes into mice, but the possibility that some of these injections activated latent mouse viruses has not been excluded with certainty. Attempts were made to estimate the importance of these viruses to disease in man by antibody surveys of human sera,[8] but the interpretation of such tests is not always simple. The presence of virus-neutralising substances in a small proportion of human sera is of itself slender evidence (as KOCH would have agreed) of previous infection with that virus. Even the demonstration of a rise of antibody to a virus during a pyrexial illness must be interpreted with caution. Thus, although a herpetic may show a rise in antibody to herpes-simplex virus during an ordinary bacterial pneumonia, no-one would infer from this that the herpes-simplex virus is the cause of lobar pneumonia. Nevertheless, inferences of this sort are all too common.

Dr. DICK is aware of these difficulties; he argues that these new viruses deserve study since they may at any time break loose and cause serious disease such as occurred in the recent Australian epidemic of Murray Valley encephalitis.[9] His remarks should be taken seriously, although, of course, the same warning applies in greater or lesser degree to all bacteria and viruses. Even the harmless staphylococcus on the bacteriologist's bench may conceivably turn vicious and bite the hand that feeds it; and the scientist has a duty to the community to estimate these risks in the case of any newly discovered potential pathogen. He cannot do this, however, until he has a sound knowledge of its distribution in nature, its pathogenicity, and its general behaviour in the laboratory. These fearsome-sounding new viruses are of great biological interest; but it would be no surprise to learn that many of them are harmless, seeking nothing but food, warmth, and comfort from their hosts, anxious not to disturb or to be disturbed, living the most luxurious of what LAIDLAW called "borrowed" lives.

Topical Application of Histamine Antagonists

THE intrinsic value of remedies designed to relieve subjective symptoms is never easily gauged; and uncontrolled trials, however large, may be deceptive. Anti-histamine drugs incorporated in various bases are widely used as local applications for the relief of pruritus and itching dermatoses; and they have been reported to bring relief in 60–90% of cases.

WALDRIFF et al.[10] describe the effect of anti-histamine creams in 277 cases of neurodermatoses as generally superior to that obtained by the internal administration of these drugs (78% of all patients relieved by topical use, compared to 56% by oral administration). About a third of the patients with neurodermatitis were "semipermanently or permanently cured." In this trial eczematous reactions ensued in 4·5% of the cases, and were commonest in patients with denuded, excoriated, or weeping dermatoses—for example, some forms of anogenital pruritus and of disseminated neurodermatitis. Local application of anti-histamine drugs to areas of mild, dry, circumscribed contact dermatitis gave

1. Dalldorf, G., Sickles, G. H. *Science*, 1948, **108**, 61.
2. Curnen, E. C., Shaw, E. W., Melnick, J. L. *J. Amer. med. Ass.* 1949, **141**, 894.
3. Huebner, R. J., Cole, R. M., Beeman, E. A., Bell, J. A., Peers, J. H. *Ibid*, 1951, **145**, 628. See *Lancet*, Jan. 10, 1953, p. 82.
4. Webb, C. H., Wolfe, S. G., Howitt, B. F. *Amer. J. dis. Child.* 1950, **80**, 245.
5. Smithburn, K. C., Mahaffy, A. F., Paul, J. H. *Amer. J. trop. Med.* 1941, **21**, 75.
6. Smithburn, K. C., Hughes, T. P., Burke, A. W., Paul, J. H. *Ibid*, 1940, **20**, 471.
7. Dick, G. W. A., Haddow, A. J. *Trans. R. Soc. trop. Med. Hyg.* 1952, **46**, 599.
8. Smithburn, K. C. *J. Immunol.* 1952, **69**, 223.
9. Burnet, F. M. *Med. J. Aust.* 1952, i, 169.
10. Waldriff, G. A., Davis, J., Lewis, G. M. *Arch. Derm. Syph., Chicago*, 1950, **61**, 361.

relief in 64% of cases; but WALDRIFF and his colleagues rightly emphasise the inadvisability of treating by this method acute or subacute vesicular dermatitis or widespread dermatitis. MADDEN [11] treated 141 cases of various selected dermatoses with 'Thephorin' (phenindamine hydrogen tartrate) ointment and reported relief in 90%, no change in 5%, and worsening in 5%.

ELLIS and BUNDICK [12] received 200 replies to a questionary which they sent to 265 dermatologists in the United States and Canada. 94% of these dermatologists reported that they had used anti-histamine drugs in the past, but only 10% continued to use them often; 50% were using them occasionally, while the remaining 40% were not using them at all. Reasons for discontinuing their use were the belief that they were ineffective, or liable to sensitise the skin, or to aggravate dermatosis. Sensitisation reactions were commonest with thephorin, followed by tripelennamine ('Pyribenzamine') and diphenhydramine ('Benadryl'); but thephorin relieved itching the most effectively. It was generally felt that these substances were useful for anogenital pruritus and neurodermatitis, but that they were of little help in moist areas. About a quarter of the dermatologists thought that the local use of antihistamines was of value; about a third were doubtful; and the remainder (approximately two-fifths) thought they were useless: 29% suggested that anti-histamines for local use should be taken off the market. The only report of controlled trials has been by BALDRIDGE,[13] who treated 41 patients with 5% thephorin ointment on one side and with its unmedicated base on the other. These were presented to the patient as "slightly different forms of the same medication," and the patients were asked to estimate the percentage of relief on the two sides. The areas treated with thephorin were reported on the average as 47% relieved, and the areas treated with the unmedicated base as 49% relieved. These results are a chastening reminder of the powerful influence of suggestion in treatment, particularly when symptoms of emotionally influenced disorders are being countered, and when remedies are "put across" with enthusiastic expectancy (as they should be in humanistic medicine).

Anti-histamine drugs vary in their skin-sensitising power; but usually 2–6% of cases become sensitised. It is therefore especially important to know whether these are really effective antipruritic agents. It is surely significant that the local use of these drugs is confined almost entirely to the neurodermatoses; for there is increasing evidence that in these conditions the pruritus is produced in the first place by emotional disturbance, though no doubt it is often aggravated by friction and local applications. It seems irrational to expect local applications to relieve a symptom which has been brought about by frustration of emotional expression. The lessening of emotional tension by the abatement or removal of a conflict situation, or by the adoption of a more nearly physiological mode of emotional expression, is the essence of relief in these maladies; and any material treatment given about the same time may undeservedly be credited with the "cure." The dermatologist is familiar, too, with the obstinate and irrepressible neurodermatoses which if relieved at one site erupt at another, indicating the seething unrest beneath; and he is also aware that the scratched and rubbed nucha or wrist may sometimes represent a genteel way of relieving an itchy anus. The value of topical anti-histamines would seem to be "not proven"; and the doctor who thinks of using them should pay due regard to their sensitising power, which is midway between that of the hazardous benzocaine derivatives and the old-fashioned but trustworthy oily calamine lotion.

11. Madden, J. F. *Ibid*, p. 673.
12. Ellis, F. A., Bundick, W. R. *J. Amer. med. Ass.* 1952, **150**, 773.
13. Baldridge, G. D. *Arch. Derm. Syph., Chicago*, 1951, **63**, 260.

Annotations

SOCIAL NEEDS: A RETROSPECT

IT is not in man's nature to be unmoved by the acts of his fellows: we are changed, for good or evil, by what goes on around us. In this country, the events of our history and the temper of our people have combined to make us build a State in which the rights and welfare of the individual citizen are particularly honoured; and we are naturally happy that others should profit by our experience, both of failure and success. At the Anglo-German conference arranged by G.E.R.,[1] which has been held in London in the past week or so, speakers surveyed our social insurance, health, and welfare services, in the hope that the German experts who attended might find in them the answer to some of their own problems.

The present scene was set against the stormy background of our history by Prof. Richard Titmuss. Ours, he said, was once a peasant society, as Germany's was; and when a family fell on evil days its needs were met by the Church, by charity, and by the collective efforts of the parish towards the relief of the poor. In a rough sort of way this served very well. This pattern of charitable welfare and collective aid broke down when the amount of social need was violently changed by the first of the Industrial Revolutions, based on the steam-engine. It called into being a great society of wage-earners solely dependent on their labour power; and dependence on this power made them more dependent on the state of their health. Ours became—and still is—a society with no useful place for the sick, the disabled, the substandard, and the old: they have lost their labour power.

"Simultaneously, this new industrial system based on the wage-earning capacity of the *individual* itself created new hazards to health and new problems in the rearing of children. As a result of the growth of town and city, factory and mine, new dangers to health and sanity appeared; new forms of mass disease arose; new social evils—psychological as well as physical—were generated. The stability of the family unit was threatened when the father left his home for six days out of seven to exchange his labour power for money; it was threatened too by a system of reward which ignored altogether his rôle as a father and his responsibilities for those who were too young or too old for industrial wage-earning work."

The Industrial Revolution, in fact, created social insecurity over the whole span of life, insecurity which the family could not remove by their own unaided efforts. By breaking up the family unit, selecting only those that industry could use and rejecting the rest, it created new problems of poverty and misery with which charity and the poor-law were unable to cope. In the 1840s Rudolf Virchow, the pathologist, led a strong public-health movement in Germany, claiming (almost

1. A society for promoting Anglo-German educational relations, founded in 1942 to help German refugee teachers and social workers to prepare for post-war educational reconstruction in Germany, and now giving a reciprocal character to its work.

in the words of the Coalition Government in the British white-paper of 1944) that the health of the people was a responsibility of government.

A hundred years' lag between the expression of a basic principle and its actual application is about average for this country. Professor Titmuss attributes the delay in this case to the fact that the present British social services—the Welfare State—had to be built up from below. When the old sources of social security—the Church, the parish poor-box, the charity of the lord of the manor—could no longer meet the demands on them, the poor working people began, voluntarily and democratically, to make their own provisions for social security. They created, he said, an embryonic Welfare State, resting on the principles of mutual aid. In the belief that all should compulsorily stand together to meet the needs of sickness, injury, old age, and unemployment, they built up a vast organisation of friendly societies, clubs, and trade unions. "The term 'friendly society' is very significant here; positively it expressed the idea—surely a Christian idea—of mutual neighbourly help in the contingencies of industrial, city life; negatively it expressed the working class loathing of a harsh poor-law and authoritarian forms of charity." It was in direct opposition to the doctrine of laisser-faire. "Every man," John Donne had written centuries before, "is a piece of the Continent, a part of the main: any man's death diminishes me, because I am a part of mankind." The working class of the 19th century were not the only ones to experience intuitively this truth: there were the great rebels of the humanitarian movements—men and women with a tradition of public service like Lord Shaftesbury, Elizabeth Fry, Octavia Hill, Florence Nightingale, and Charles Booth. They rebelled, as Professor Titmuss said, "against the excesses of a philosophy of unbridled individualism"; and many of their rebellions were successful, because they were based on a passionate desire for social justice. They are still with us, the private rebels and reformers, still moved by the same desire and still expressing it in voluntary social service.

"Over 10,000 men and women are now engaged, in a voluntary capacity, in running the present system of hospital boards and hospital management committees under the National Health Service. Never before have so many voluntary workers been engaged in constructive work on hospital boards and committees."

The conjunction of two social forces—the working-class ethic of mutual aid, and the educated man's tradition of public service—achieved the social policies of the early years of this century: national insurance schemes of sickness benefit, general-practitioner care, unemployment benefit, and workmen's compensation, and the beginnings of school meals, a school medical service, and a maternity and child-welfare service. The Boer War, by revealing much physical unfitness among recruits, fostered the revolutionary idea of prevention. "It was revolutionary because it spelt publicly sponsored services and a higher income-tax."

The second Industrial Revolution—the scientific revolution—aggravated the social problems of the first. Children meant poverty and poverty, as always, meant sickness. Social services multiplied to meet special needs—"a patchwork," as the Beveridge report said, "of disconnected administrative organs." The second world war taught us still more about basic social needs, and especially the need to get away from a two-standard service—an inferior standard of health care, education, and nutrition for the poorer classes, a higher standard for the better-off. A civilians' war, we found, must be fought on the principle of "fair shares," and this principle was carried over into the peace and written into the National Health Service, National Insurance, National Assistance, and Family Allowances Acts, and the Education Act. In this legislation we can discern recognition of the importance of the family unit; recognition that the costs of unemployment and sickness must be a national charge; a greater emphasis on prevention; and the backing of scientific medicine by the State, so that all may benefit by it. The work is incomplete, and we have often made mistakes, but Professor Titmuss believes that the aims of the Welfare State do offer a healthy alternative to either a totalitarian State or a system based entirely on materialistic values.

INTESTINAL MOVEMENTS

MOVEMENTS of the alimentary canal in man have been studied mostly by radiological techniques, or else by introducing balloons to record pressure changes. Both methods have their disadvantages, and neither gives results that are as straightforward as they may seem. With balloons changes of pressure due to intestinal movements may be too sluggishly recorded, or if the balloon is so inflated as to distend the walls of the gut this may itself initiate movements. Code et al.[1] at the Mayo Clinic have worked out their own method of recording pressure by means of balloons; but they make it clear that this is inaccurate for contractions recurring more than once in about 5 seconds. Contractions of far greater frequency can, however, be recorded by transferring changes of pressure into variations of electric current.

Code and his associates agree with earlier workers in describing three types of intestinal movement. Type 1 is reflected in low-amplitude waves, each lasting 5–20 seconds, which are very constant for any particular portion of bowel. Type-2 waves are of greater amplitude and may last up to 60 seconds. In type 3 a change of tonus or "base line," sometimes lasting for minutes, is added to waves of type 1 or 2; this 3rd type is seen most commonly in records of the small intestine. In patients with ulcerative colitis there may be a further type (type 4) of large single waves, lasting 1–2 minutes; this type seems to be limited to the colon. In the small intestine type-1 waves are mainly for "mixing" and type-3 waves for propulsion; type-2 waves are rarely, if ever, seen. In general the small intestine shows much more continuous activity than is evident in either the stomach or the colon; it is at rest for less than half the twenty-four hours, being depressed in sleep when type-3 waves largely disappear.

Ingelfinger and Moss[2] have shown that nausea is often associated with generalised contraction of the duodenum, and other investigators have noted duodenal spasm during mental or physical situations which involve distress or pain. Many agents reduce or inhibit motility of the duodenum or small intestine: one is atropine, while others are such drugs as tetraethylammonium chloride and 'Banthine.' It is not, however, so well recognised that transit through the small bowel is also delayed in such conditions as acute bacillary dysentery. With obstruction of the small intestine type-3 waves increase, with a gradual disappearance of type-1 ("mixing") waves. In observations on an isolated loop of jejunum Jackson[3] found that propulsive waves were most violent when the distal end of the loop was occluded and fluid was introduced into the proximal end. Pain, however, did not seem to be related so closely to these peristaltic waves as to the type of fluid introduced into the loop. Thus water or 5% glucose solution caused only slight discomfort, whereas 50% glucose solution caused extremely severe colicky pain referred to the umbilicus—which persisted after peristalsis had ceased in the loop. Our knowledge of the sensory innervation of the small intestine is far from complete, but all evidence seems to show that distension is the main—if not the only—stimu-

1. Code, C. F., Hightower, N. C., Morloch, C. G. *Amer. J. Med.* 1952, **13**, 328.
2. Ingelfinger, J. F., Moss, R. E. *Amer. J. Physiol.* 1942, **136**, 561.
3. Jackson, W. P. U. *Clin. Sci.* 1952, **11**, 209.

lus which gives rise to true "colic." Morphine, which clinically brings about constipation as well as relief of pain, seems to increase tone with obliteration of the gut lumen while greatly reducing propulsive type-3 waves.

Movements of the colon differ from those of the small intestine in many ways: type-1 ("mixing") waves are less frequent in the lower bowel, while type-2 waves, each lasting about 30 seconds, are of greater pressure; it is these waves that account for the haustration seen radiographically. The so-called mass movement of the colon—a very infrequent propulsive wave—is confined to the large intestine. In normal people colon motility is extremely variable; periods of activity alternate with periods of inactivity, and both are greatly influenced by the emotional state. In patients with chronic ulcerative colitis the total colonic activity seems to be reduced, with a general change from the mixing to the propulsive type of movement. In the colon, as in the small intestine, morphine tends to increase the non-propulsive movements and to decrease the propulsive.

We still do not know the exact relation of absorption of food to the frequency and strength of the different intestinal movements, nor of the varying rates of absorption of different substances to the amount of mixing they undergo in the small intestine. These and allied problems offer a fruitful field for further investigations.

STILLBIRTHS AND NEONATAL DEATHS

Two factors in particular seem to have largely accounted for the decline in the number of stillbirths and neonatal deaths. These factors are better social conditions and a higher standard of obstetric practice. At first both seemed equally important; but with the continued decline in the stillbirth and neonatal death rates their influence became less distinct and their relative importance changed. With the establishment of adequate maternity services and a high general standard of living obstetric causes were seen to account for a higher percentage of deaths.

Workers [1] at Bristol, where the stillbirth and infant death rates are low and the general standard of living is high, have compared two series of stillbirths and neonatal deaths with two groups of controls. No significant difference was found between cases and controls in social factors, nor in the *amount* of antenatal care; important differences were discovered, however, in the *quality* of obstetric care. For instance, many patients with infants who were born dead or who died neonatally were not seen by a consultant at any time during the pregnancy or labour, although the number of abnormalities among such patients was far greater than among controls. Commonly the reason for this was that labour began before the 34th–36th week, when specialist appointments are normally made. It appeared that there was a failure to appreciate that some cases may require specialist supervision at a much earlier stage in pregnancy than that normally regarded as routine. 44% of the stillbirths and 60% of the neonatal deaths were of infants with a birth weight below $5\frac{1}{2}$ lb. The most common complication of pregnancy was found to be toxæmia. This condition, besides occupying first place as a cause of maternal death, is the most common condition known to be associated with prematurity.[2] Possibly the early signs of this condition were evident before the 34th week; and had these signs been recognised, and specialist advice sought, some of these premature births might have been prevented.

It would appear that throughout the country antenatal care is often energetically practised along strictly routine lines. Thus patients are commonly weighed at each visit, yet any attempt to control weight-gain by diet is rare. Similarly, iron in tablets is given in large amounts to almost all patients; not always, however, is an attempt made to ensure that such tablets are taken, and that if they are taken the iron is absorbed and the patient's blood picture improves. The mounting list of routine investigations carried out on all patients at every visit to the clinic tends to divert attention more and more from the individual patient and from the true purpose of antenatal care—namely, the early detection of important abnormalities. The Bristol workers have given a timely reminder that much of the standard practice in antenatal care is due for reconsideration. Greater obstetric skill can prevent only a proportion of stillbirths [3]; but this proportion is by no means small.

1. Wofinden, R. C., Ross, A. I., Aidin, R., Hartley, G. An Inquiry into Stillbirths and Neonatal Deaths in Bristol (1948–50). Obtainable from the Secretary, Southmead Group Hospital Management Committee, Bristol.
2. See leading article, *Lancet*, 1952, ii, 921.

INTRA-ŒSOPHAGEAL PRESSURE

By means of a modern electromanometer and some fine plastic tubing slipped through the nose, it is easy to record respiratory and cardiac fluctuations in the œsophagus. Recent work on both sides of the Atlantic has been concerned with two different aspects of such records—namely, as guides to general intrathoracic pressure and to certain cardiac events.

Dornhorst and Leathart [4] found good dynamic agreement between the pressures in the œsophagus and in a shallow pneumothorax and concluded that the intra-œsophageal pressure reflected intrathoracic pressure. Such measurements have been helpful in analysing circulatory events—for example, in Valsalva's manœuvre [5] and with pulsus paradoxus [6]—and, combined with a respiratory record, they provide a simple way of investigating the mechanical properties of the lungs and air-passages. The principles of this potentially valuable type of investigation were clearly set out twenty-five years ago by von Neergaard and Wirz,[7] but they have been little exploited because the original method necessitated puncturing the pleura—a possibly risky procedure in patients with pulmonary disease. An American team [8] has now confirmed the agreement between œsophageal and pleural pressures, and has used the method to construct volume-tension characteristics for normal and emphysematous lungs.[9] The further application of this technique—for example, to provide an objective measure of fibrosis in patients with silicosis—should yield information of interest and possibly of diagnostic or prognostic value.

The œsophageal-pressure record, especially when a water-filled system is used, shows cardiac pulsations which vary at different levels of the œsophagus and are often considerably larger than those in an intrapleural record. They must therefore depend on some local action of the heart-beat. It is natural to inquire what information they will yield about events in the heart, and especially in the left auricle which is in direct contact with the œsophagus. This question has been studied by Zoob [10] in this country and by Lasser et al.[11 12] in the U.S.A. A prime object has been to assist in the recognition of mitral incompetence—a diagnosis whose importance has been greatly enhanced by the introduction of valvotomy. Lasser and Loewe [11] showed that in dogs the œsophageal pulse agreed in form remarkably well with the pressure-pulse recorded directly from the left auricle, both before and after the production of mitral incompetence. In patients they have obtained

3. Sutherland, I. Stillbirths: their Epidemiology and Social Significance. London, 1949.
4. Dornhorst, A. C., Leathart, G. L. *Lancet*, 1952, ii, 109.
5. Howard, P., Leathart, G. L., Dornhorst, A. C., Sharpey-Schafer, E. P. *Brit. med. J.* 1951, ii, 382.
6. Dornhorst, A. C., Howard, P., Leathart, G. L. *Lancet*, 1952, i, 746.
7. von Neergaard, K., Wirz, K. *Z. klin. Med.* 1927, **105**, 35.
8. Fry, D. L., Stead, W. W., Ebert, R. V., Lubin, R. I., Wells, H. S. *J. Lab. clin. Med.* 1952, **40**, 664.
9. Stead, W. W., Fry, D. L., Ebert, R. V. *Ibid*, p. 674.
10. Zoob, M. *Brit. Heart J.* 1952, **14**, 545.
11. Lasser, R. P., Loewe, L. *Amer. Heart J.* 1952, **44**, 531.
12. Lasser, R. P., Epstein, B., Loewe, L. *Ibid*, p. 681.

œsophageal-pulse records which they feel can be interpreted as showing the presence and nature of mitral disease. Zoob has obtained similar records but is less confident about their interpretation. A cautious attitude may be wise. These two groups of workers agree that the œsophageal pulse does not actually measure the left auricular pressure; and furthermore the experience of Wynn and his colleagues,[13] who made direct measurements of auricular pressures at operation, suggests that the interpretation of these pressures in mitral disease is far from easy. The status of the "œsophageal piezocardiogram" is still uncertain; and further direct correlation of it with operative findings would be helpful.

"FUNCTIONAL END-ARTERIES" IN MUSCLE

ONE of the more tedious occupations pursued by the student of anatomy is the memorisation of the great system of collateral circulations by which the body safeguards its lines of communication. Now that aneurysms are out of fashion the meaning of this system often becomes clear only when he sees a coarctation of the aorta or Blalock's operation. The surgery of congenital vascular defects often demonstrates the astonishing extent to which these "by-passes" can dilate in response to need. For example, in a case of coarctation Clagett[14] ligated the left subclavian artery above its branches and also the first three left intercostal arteries; the hand was pulseless for some time, yet it showed no sign of gangrene.

In other situations, however, collateral circulations are not so successful, and some arteries have won notoriety as "functional end-arteries," implying that if they are blocked the central part of their distribution will die or be severely injured by ischæmia. Such a result depends on a combination of factors, among which are the rapidity of the blockage, the oxygen needs of the tissue, and the capacity of the collateral vessels to respond. If the occlusion of the artery is gradual, the collateral circulation has time to dilate to the best of its capacity and the tissues may not suffer. If, however, the block is sudden, some tissues with a high oxygen demand may be unable to get along with a grossly reduced supply while the necessary permanent dilatation is in progress. Again, disease of the collateral vessels may prevent the establishment of an adequate relief circulation in a reasonable time, so that even tissues with less urgent oxygen requirements may die. The term "functional end-artery" is therefore a poor one, since there is hardly an artery in the body that cannot be brought into this category by the force of circumstances. Thus in arteriosclerosis the lumen of a diseased artery anywhere in the body may be suddenly occluded, and the collateral vessels may be in no condition to meet the demand. Even the skin, the traditional home of free anastomosis, is not immune; and Edwards[15] has pointed out that in an arteriosclerotic lower limb the occlusion of an artery supplying the skin may lead to a patch of cutaneous gangrene.

Edwards also notes that one muscle occasionally becomes gangrenous while the rest of the limb is comparatively little affected, and suggests that this is due to the lack of adequate communication between the vessels supplying adjacent muscles; some main muscular vessels, in fact, behave as end-arteries. Brash[16] has worked on the gross blood-supply of the muscles of the upper limb, but as yet there appears to be no full statement for the lower limb. Blomfield[17] has studied the vascular patterns within some of the muscles of the lower limb, and finds great variation in the degree of intramuscular anastomosis in different muscles. For example, gracilis is well endowed, but tibialis anterior is not. He correlates this variation with clinical findings, such as the tibialis anterior syndrome,[18] in which the extensor muscles atrophy following exercise. Compared with the effort expended on other aspects of muscle physiology, the vascular supply of human and animal muscle has been neglected. Le Gros Clark[19] and Blomfield[17] have reviewed their own and other work on experimental ischæmia in animals. In rabbits the interruption of a main vessel of supply to certain muscles leads to necrosis of a well-defined region of the muscle, despite the existence of intramuscular anastomotic channels. It is not known whether this happens because the collateral circulation is anatomically inadequate or because striated muscle can survive only a short time without oxygen.

We hope that further clinical work on the lines followed by Edwards will be supplemented by basic observations on experimental ischæmia and on the anatomy of the blood-supply to muscles.

13. Wynn, A., Matthews, M. B., McMillan, I. K. R., Daley, R. *Lancet*, 1952, ii, 216.
14. Clagett, O. T. *Proc. Mayo Clin.* 1947, **22**, 131.
15. Edwards, E. A. *New Engl. J. Med.* 1952, **247**, 627.
16. Brash, J. C. *J. Anat., Lond.* 1947, **81**, 376.
17. Blomfield, L. H. *In* Recent Advances in Physical Medicine. London, 1950; p. 45.

SMALL-QUANTITY BLOOD TESTS FOR SYPHILIS

HITHERTO we have had no authoritative evaluation of the various micro-serological tests for syphilis. Now, however, the venereal diseases section of the United States Public Health Service has filled this gap.[20–24]

Of the tests described, the micro-modification of the Venereal Disease Reference Laboratory (V.D.R.L.) test requires 0·015 ml. of serum; the filter-paper microscopic (F.P.M.) test is done on a saline extract of a drop (0·05 ml.) of whole blood dried on a strip of filter-paper; while the Chediak test requires 0·05 ml. of whole blood dried on a glass slide. These last two tests can be used as "detector" reactions in field operations. Five laboratories participated in the comparative tests, and all reactions were measured on the fourth day after the donors were bled.

The four modifications of the Chediak test (Chediak-Kline, Chediak-Mazzini, Chediak-Kahn, Chediak-V.D.R.L.) proved more specific and sensitive than the original Chediak test itself; but the Chediak-Kahn and Chediak-V.D.R.L. modifications were much less specific than the other two, and gave a much higher proportion of non-syphilitic reactions. The Chediak-V.D.R.L. modification has the advantage that results can be reproduced in different laboratories.

This study seems to show that these micro-tests are inferior both in sensitivity and specificity to the usual serum tests, and should be avoided if possible. If venepuncture proves impracticable, enough blood for such a test can usually be obtained by the intelligent use of a guarded safety-razor blade. Secondly it appears that the micro-V.D.R.L. test is superior to the other micro-tests, but loss of specimens either in transit or in the laboratory (amounting to 8% in the American investigation) cannot be ignored. Thirdly, all varieties of the Chediak test show a loss of sensitivity when carried out on specimens stored for more than 24 hours. Fourthly, the F.P.M. test is much less sensitive than the usual serum tests, and its use should therefore be limited to some field operations. Finally, the value of micro-tests for syphilis is greatest in mass testing of a population remote from a fully equipped laboratory. The choice of these tests is influenced by the type of donor, geography, the interval between collection and testing, the capacity of the field laboratory to do the tests, and the fact that with relatively untrained personnel all specimens are likely to be collected successfully.

18. Hughes, J. R. *J. Bone Jt Surg.* 1948, **30B**, 581.
19. Clark, W. E. Le Gros. *Bull. War Med.* 1946, **6**, 1.
20. Olansky, S., Harris, A., Vinson, H., Bossak, H. N., Portnoy, J. *Publ. Hlth Rep., Wash.* 1952, **67**, 563.
21. Harris, A., Olansky, S., Miller, H. *Ibid*, p. 581.
22. Freeble, C. R., Orsburn, B. *Ibid*, p. 585.
23. Harris, A., Olansky, S. *Ibid*, p. 572.
24. Cannefax, G. R., Beyer, H. R., Johnwick, E. B. *Ibid*, p. 576.

ACERIN

THE discovery of a new bacteriostatic agent is unlikely to arouse more than polite interest today, but a substance active against viruses is always news. Fischer [1] has studied the action of an extract from the fruit of the Norwegian maple (*Acer platanoides*) on a bacteriophage and on vaccinia virus. The active substance in these extracts, to which he has given the provisional name "acerin," appears to have a rapid phagicidal action on a *Bacterium coli* bacteriophage in concentrations which do not inhibit the growth of the host bacterium. A small number of experiments suggest that acerin may also have a virucidal action on vaccinia virus. Apparently it has no significant effect on a staphylococcus bacteriophage, and a few experiments suggest that it is not toxic to mice and rabbits in the dosages tested.

This is only a preliminary communication, and clearly much more information is needed about the range of activity, mechanism of action, and chemical structure of acerin before deciding whether it will prove an important chemotherapeutic substance, giving the lead to more of its kind, or merely a laboratory curiosity.

OBJECTIVE TESTS FOR CORONARY INSUFFICIENCY

IN the absence of abnormal signs in the heart and electrocardiogram, the diagnosis of coronary disease often depends solely upon clinical interpretation of the history. The story of angina pectoris is usually characteristic enough, but there are always a few patients with atypical chest pain in whom objective evidence of coronary insufficiency would be valuable. Standard tests, based on the well-known capacity of exercise and anoxæmia to provoke electrocardiographic changes similar to those sometimes recorded in an anginal attack, have been used for some time and found helpful. The exercise test consists in climbing steps either a fixed number of times [2] or until pain or breathlessness appear.[3] In the anoxæmia test a mixture of 10% oxygen and 90% nitrogen is breathed from an anæsthetic apparatus for periods up to 20 minutes. The electrocardiogram may be affected in several ways: the chief changes are depression of the RST segment, inversion of the T wave, and, more rarely, shortening of the P–R interval.[4] These changes are found to a limited extent in apparently healthy people in response to exercise or anoxæmia, but when the RST depression in leads I, II, III, and IV totals 3 mm. or more, or when there is inversion of the T wave accompanied by RST depression of 1 mm. or more in lead I, they are generally regarded as abnormal.[5 6] Turner and Morton [7] have lately confirmed this view and emphasised the importance of using lead IV.

An abnormal response either to exercise or to anoxæmia may be expected in between a quarter and a half of those with known angina or with a history of infarction. The mechanism of the changes is obscure, for their unpredictable appearance cannot be correlated with the degree of oxygen desaturation of the blood or with the extent of coronary arteriosclerosis.[8] However, provided that the effects of a recent heavy meal, a cold drink, or severe anæmia can be excluded, they may be taken as evidence of coronary insufficiency. There is little to choose between the exercise test and the anoxæmia test, and the two are probably best used in conjunction.[9] Satisfactory electrocardiograms are less easy to obtain after exercise; on the other hand, the anoxæmia test has caused unpleasant and even dangerous effects, although its advocates believe it to be safe enough provided that a supply of 100% oxygen is immediately available.

Clearly, both tests have disadvantages, especially since negative results do not exclude angina pectoris; but they have a definite place in diagnosis. Turner and Morton suggest that they should be used for those cases of suspected angina without positive signs and where the pain is atypical. They also suggest their use as a method of assessing recovery from myocardial infarction, as a test of fitness for surgical operations, and as an index of the therapeutic action of drugs on the coronary circulation. Nevertheless the limitations of the tests emphasise the importance of adequate history-taking and complete electrocardiographic investigation.

1. Fischer, G. *Acta path. microbiol. scand.* 1952, **31**, 433.
2. Master, A. M., Friedman, R., Dack, S. *Amer. Heart J.* 1942, **24**, 777.
3. Riseman, J. E. F., Waller, J. V., Brown, M. G. *Ibid*, 1940, **19**, 683.
4. Greene, C. W., Gilbert, N. C. *Arch. intern. med.* 1921, **27**, 517.
5. Levy, R. L., Williams, N. E., Bruenn, H. G., Carr, H. A. *Amer. Heart J.* 1941, **21**, 634.
6. Burnett, C. T., Nims, M. G., Josephson, C. J. *Ibid*, 1942, **23**, 306.
7. Turner, R. W. D., Morton, E. V. B. *Brit. Heart J.* 1952, **14**, 514.
8. Burchell, H. B., Pruitt, R. D., Barnes, A. R. *Amer. Heart J.* 1948, **36**, 373.
9. Björck, G. *Ibid*, 1946, **32**, 689.

MESENTERIC THROMBOPHLEBITIS MIGRANS

THROMBOPHLEBITIS is a mysterious disorder. Occasionally it manifests itself—nearly always in men under the age of 50—as a series of episodes involving mainly superficial veins but sometimes a vena cava.

North and Wollenman [1] report 3 cases of venous mesenteric thrombosis occurring in series with migratory thrombophlebitis. From their account it is clear that this grave complication has a characteristic clinical picture; and prompt diagnosis and resection of the infarcted segment or segments of gut may be life-saving. A vital clue is the history of an attack, perhaps years previously, of superficial thrombophlebitis with, in about a quarter of the cases, evidence of pulmonary involvement. The actual mesenteric venous thrombosis does not present—like arterial occlusion—as a fulminating catastrophe. The principal disturbance is abdominal pain becoming, over several days, increasingly severe. There is a notable absence of signs of peritoneal irritation, although in the later stages tenderness may be present over the infarcted segment, which is often palpable. The lumen of this segment is not occluded; hence vomiting and distension are inconstant and late. Red blood is often passed per rectum. Operation reveals an imperfectly demarcated infarcted portion of large or small intestine. The veins draining this segment are filled with dark-red thrombi whose uniform age suggests that their extension proximally to the collecting veins is more likely to result from propagation than from intermittent involvement. The arterial bed is not thrombosed.

North and Wollenman point out that resection, while it saves life, has no influence on the disease and further thrombotic episodes are likely. In thrombophlebitis migrans anticoagulant therapy with dicoumarol or ethyl biscoumacetate ('Tromexan') should perhaps be continued for many months or even years. The disease may subside as mysteriously as it starts; so the true efficacy of such therapy cannot be gauged.

NUFFIELD CHAIR OF SURGERY: AN APOLOGY

OUR last issue contained an announcement that Professor T. Pomfret Kilner had been appointed to succeed the late Sir Hugh Cairns as Nuffield professor of surgery in the University of Oxford. This announcement was based on a newspaper statement which, though explicit and detailed, was quite incorrect: the position at Oxford remains as it was last October, when we reported that Professor Kilner had been asked to carry on the duties of the Nuffield chair during the current term, and the successor to Sir Hugh Cairns has not yet been chosen. We greatly regret the inconvenience caused by our giving currency to inaccurate information.

1. North, J. P., Wollenman, O. J. jun. *Surg. Gynec. Obstet.* 1952, **95**, 665.

Special Articles

THE FIREGUARDS ACT

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UNDER the Fireguards Act, 1952, it will become an offence for any person to sell or hire (except in certain specified circumstances) an electric or gas fire or oil-burning space-heater which is not fitted with a guard conforming to prescribed safety regulations. The Act gives the Secretary of State power to issue these regulations, and to decide when the Act shall come into operation.

In framing the regulations the Secretary of State will no doubt be largely influenced by the findings of the British Standards Institution committee, which were set out in the new standard no. 1670 (1951) for electric fires, and amendment no. 1 to British standard 1250/1946 for the most dangerous types of gas-fire.

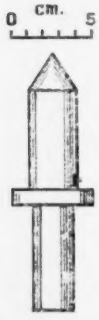


Fig. 1—The testing cone. (With acknowledgments to the British Standards Institution.)

In the standard for electric fires it was laid down that the safety or otherwise of any particular type should be judged by two considerations:

1. *Non-accessibility of Live Parts.*—This was to be determined by three specific tests, as follows:

(*a*) By a dummy finger (preferably connected up to an indicator lamp) of specified dimensions, which, when passed through any apertures *in the case* of the fire, does not reach any live parts.

(*b*) By a testing cone (fig. 1) which must not be able to pass through any aperture *in the dress-guard* and touch the element or elements at any point.

(*c*) By measurement of the distance between the element or elements and the guard. In the case of reflector fires with spiral wire elements this distance must not be less than 1 in. In the case of fires heated by a "fire-bar" element (i.e., a helix of resistance wire mounted on a fireclay support), the distance must not be less than 2 in. at the centre of the element, and $1^1/_2$ in. at the extremities.

2. *Heat Intensity at the Face of the Dress-guard.*—This was to be roughly determined by the effect of the heat upon a readily flammable fabric such as flannelette. If a piece of this material laid on the guard with the fire at full heat, does not "smoulder or ignite" within 10 seconds, the guarding is considered adequate (at least for the protection of able-bodied adults).

The standard specifications speak at one point (clause 17) of "scorching" of the flannelette; and at another point (clause 25) of "smouldering." It should be noted that the time of exposure needed to produce these two effects is often widely different. Moreover, although these specifications have been drawn up by the British Standards Institution, manufacturers are not required by law to conform to them. Some manufacturers have announced their intention to do so, but there are already indications that others will not. Quite recently (November, 1952) an inexpensive reflector fire (retail price under £2) has been put on the market with a neat wire-mesh guard which is fixed *at only* $^1/_8$ *in.* from the fire-bar, so that it clearly fails to conform to the British standard specifications. When this fire and guard was tested for heat intensity, it was found that white flannelette began to scorch at 7 seconds, and was blackened at 10 seconds, but did not begin to smoulder until 18 seconds. The fire carried no maker's name. The retailer who showed it to me assured me that it would sell much more readily than one with an adequate guard made by a firm of good reputation at a much higher price.

The standard for gas-fires applies only to "portable gas fires and gas fires fitted above hearth level having exposed flames or radiants." Its safety clauses are similar to those for electric fires, but the one dealing with non-accessibility of the heated element is judged by a cone test only, and in its dimensions differs somewhat from that employed for electric fires. The heat-intensity test is identical with that for electric fires, but here again the value of the test depends largely upon whether scorching or smouldering is taken as the danger point. Since these fires tend to be somewhat hotter than electric fires the margin of safety secured by the B.S.I. specifications for their dress-guards is correspondingly less.

NEW GUARDS FOR OLD FIRES

The passing of this Act was an important step in the elimination of burning accidents from our homes. But it is not enough. For the Act takes no account of the (estimated) 4–5 million gas and electric fires already in use in homes, offices, hospitals, and elsewhere in England and Wales—to say nothing of the coal fires, which are believed to number something like 12 million. These various types of fires have been involved in, if not entirely responsible for, approximately 2400 severe burning accidents a year since the war—that is, nearly 7 a day. About 280 of them each year have proved fatal; and 75% of these accidents have happened to children, to people over 65 years of age, or to epileptics. If most of these fires continue in use for some years, as they well may, and continue to be (for the most part) unguarded, in homes where there are children, old people, or epileptics, we must expect that they will still contribute to as many tragic accidents as they have done in the past.

It is for the public to deal with this unfortunate situation—the Government cannot do so. Many people during the last few years have improvised guards for their electric fires—from cake-trays, wire letter-baskets, and the like. Others have exercised their ingenuity devising guards specially suited to the several types of

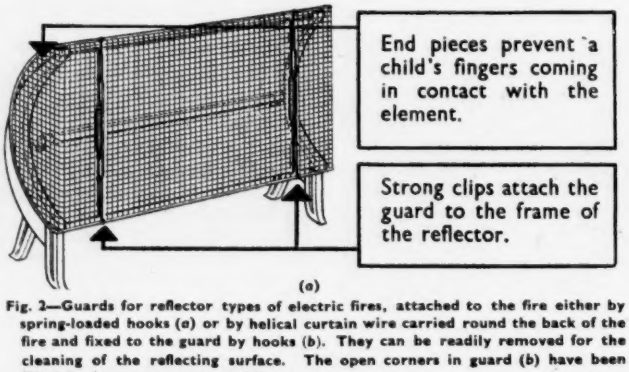

End pieces prevent a child's fingers coming in contact with the element.
Strong clips attach the guard to the frame of the reflector.
(a)
(b)

Fig. 2—Guards for reflector types of electric fires, attached to the fire either by spring-loaded hooks (*a*) or by helical curtain wire carried round the back of the fire and fixed to the guard by hooks (*b*). They can be readily removed for the cleaning of the reflecting surface. The open corners in guard (*b*) have been filled in, in most recent models.

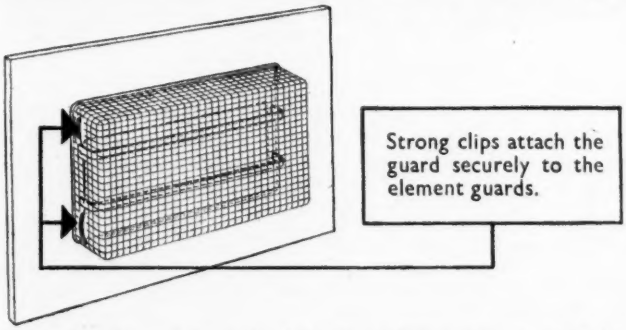


Fig. 3—Guards for non-reflector electric fires (portable or panel types), attached by means of clips, in such a way that a child could not easily remove them.

electric and gas fire, which could be marketed at a reasonably low price. These new guards are now available, and they will undoubtedly go far to eliminate the most dangerous accidents—those caused by the ignition of clothing and the burning of children's hands. Some of the earliest models were rather unattractive in appearance, but this difficulty has been largely overcome. Moreover it is expected that parents who are concerned about the safety of their children will be willing to make some small sacrifice of æsthetic satisfaction—they will regard a dress-guard as a kind of insurance (and indeed it is so regarded in most other countries).

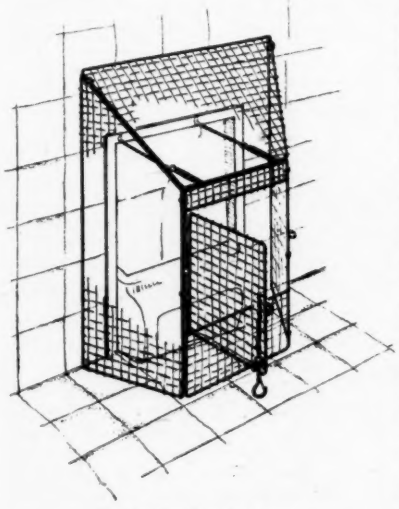


Fig. 4—The Braddell guard.

Unfortunately the new guards are not yet widely known, as the firms that have produced them are not in a position to embark upon a nation-wide advertising campaign. This article is written in the hope that many of those connected with the health services—doctors, hospital and district nurses, health visitors, welfare workers, and others—will use such opportunities as they have to make these guards widely known and to encourage their use. It is felt that hospitals, especially, have a responsibility to set an example in this matter. Already a few have acquired guards for the electric fires used in waiting-rooms, side-rooms, sisters' duty rooms, and nurses' homes. It is hoped that all others will follow suit.

Is there danger from electric shock associated with the use of these wire guards? As this possibility has sometimes been suggested I have sought expert advice on the point. I was given the following opinions:

(i) Provided the fire is on a proper 3-pin circuit (with nothing disconnected) the use of guards such as those shown in figs. 2 and 3 cannot create any electrical hazard.

(ii) But very often there is some fault in the circuit—e.g., the earth wire is not properly connected up to the socket of the switch, or the earth wire in the plug has got loose, or the wiring of the premises is incorrect, or the earth wire is not connected up properly to a water pipe, &c. In such a case *any* electric fire carries a shock hazard—and the presence of a wire mesh guard will not materially increase it.

(iii) The risk of thermal burning injury associated with an unguarded fire is so much greater than that of electric shock that the balance of advantage is quite clearly in favour of guarded fires.

In view of the possible risks referred to under (ii) both the makers (whose names are given below) emphasise that their guards should be fitted by a competent person, and give explicit instructions as to how they should be fixed.

Guards for reflector types of electric fires appear in fig. 2, and for non-reflector (portable or panel) types of electric fire in fig. 3. Actually the guard shown in fig. 2(*b*), which is made in several sizes, can also be used for non-reflector types. In such cases the guard can be fixed by passing the curtain wires through the horizontal bars usually provided in front of the element and hooking them (with the help of a button-hook) into the front wires of the guard. This method of fixing has the advantage that a child would have more difficulty in removing the guard than when the curtain wire is simply carried round the back of the fire.

GUARDS FOR GAS-FIRES

The guards shown in fig. 2(*b*) and fig. 3 can be applied to those types of fixed gas-fire which carry one or more horizontal bars across the front to which the springs or curtain-wire can be attached. For some of the portable gas-fires (reflector types) at present on the market the guards shown in fig. 2(*b*) will be applicable. In other cases it is hoped that the makers of standard models of gas radiants will be able to supply an appropriate guard.

GUARDS FOR COAL-FIRES

There are so many types of coal-fire—the old-fashioned kitchen range, the bowl fire so widely used in living-rooms, and the closable type of slow-combustion stove—that it would seem to be impossible to design a guard which will be applicable to all of them. And many of the guards which have been on the market in the last fifty years are clearly not very suitable for their purpose.

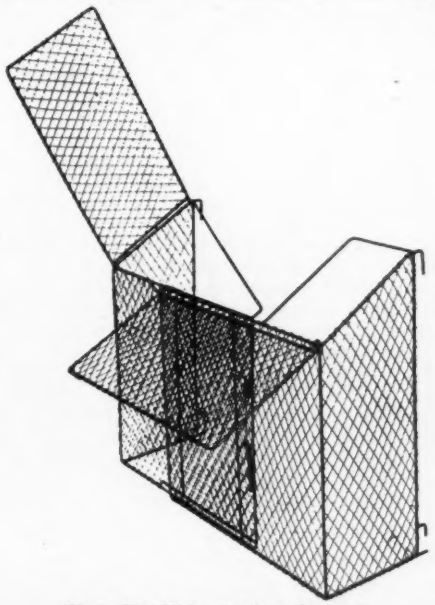


Fig. 5—The Edinburgh telescopic guard.

The old "nursery" type is usually too large for the modern small home, whose kitchen is also the living room. The smaller fold-up types are usually devoid of any effective means of fixing them to the fireplace, so that a child can and often does remove them. They have also to be removed for re-fuelling or stoking the fire. It is to be hoped that it may soon become standard building practice (and enforced by local authorities) to provide staples at the side of the hearth to which guards can be securely hooked.

Meanwhile a new design has been introduced which dispenses with the need for such staples and certainly seems worthy of a thorough trial. It is the 'Braddell' guard (fig. 4), sponsored by the Women's Advisory Council for Solid Fuel, which is now made (for the trade only) by Messrs. Duke, Waring, & Crisp Co., of London. This guard is fixed to the chimney by two strong spring-loaded hooks. It has also a large gate, fastened by a strong dog-lead type of clip which a child cannot easily undo. And it can be folded up and put away when not required.

A rather more substantial and larger guard which is favoured by the Edinburgh Accident Prevention Council and the Scottish Department of Health is that shown in fig. 5. It allows the fire to be re-fuelled through the top, and it is adaptable to grates of different sizes by virtue of the telescopic construction of the front. This latter feature also enables it to be folded into a comparatively small space when not in use. Guards of this type are hired by the Edinburgh Accident Prevention Council, to householders who cannot afford to buy them, for the sum of 5*s*. a year. I am informed that there is a long waiting-list for them.

Neither of these guards is spark-proof. To make them so it would be necessary to use a guard of much smaller mesh, which would hide the fire. Such guards would probably not be used. It has therefore been thought better to concentrate on the greater danger—that of direct contact of clothing with the fire.

The guards shown in figs. 2(*a*) and 3(*e*) are made by Messrs. J. Broughton & Sons Ltd., of 234, Pershore Road South, King's Norton, Birmingham, 30, under the trade name of 'Lumley' guards. Those shown in figs. 2(*b*) and (*c*) are sold as 'Ann-D' guards and are made by the Kleerun Co., Lane End, High Wycombe, Bucks. The illustrations fig. 2(*a*) and fig. 3 are borrowed, by kind permission of the town clerk of Birmingham, from the leaflet *Advice on Fireguards*, issued by the city council.

THE MEDICAL SERVICES IN THE KOREAN WAR

FROM A CORRESPONDENT

IT is now over two years since the British 27th brigade, and later the 29th, joined the fighting in Korea. The medical problems of any campaign are those of collection, first-aid, evacuation, and definitive treatment of the sick and wounded; but particular circumstances determine what is practicable and the results that can be obtained. The relatively static battle lines which have developed during so much of the Korean fighting have been compared to the western front of the 1914–18 war, and the description "Passchendaele of the hilltops" has been used. Another comparison was made by a former D.D.M.S. of the 5th Corps in Tunisia, who, during a visit to Korea, said that if he had been led blindfold into the forward areas in the British zone it would have been difficult for him to tell that he was not back in Tunisia, at any rate as far as the superficial appearances of terrain and of medical arrangements were concerned. The medical services of the British Commonwealth Division have been working for over a year in this setting. There are 3 field ambulances—Canadian, British, and Indian. The Indian field ambulance has attached to it a field surgical team. There is a Canadian field dressing-station and a Canadian field surgical team. These forward units serve one of the new mobile army surgical hospitals (M.A.S.H.), in this case a Norwegian unit, and a Swedish Red Cross hospital.

LINES OF EVACUATION

From Korea the wounded go to a combined hospital at Kure, in Japan, the British Commonwealth General Hospital, which is staffed by British, Australian, and Canadian personnel, and where there is also a convalescent depot. Although the British field ambulance deals mainly with the Norwegian M.A.S.H., a proportion of casualties, including nearly all neurological cases, are sent direct to American M.A.S.H.s which have well-equipped neurosurgical teams. The consultant supervision of all forward units and all hospitals in Japan is the responsibility of the consultants division of the medical section, G.H.Q., United Nations and Far East Command. Certain medical casualties are treated in Korea, but all the others are evacuated by air to Japan and then by rail to the Commonwealth hospital. Most of the neurosurgical cases pass from the M.A.S.H. along the American lines of evacuation to Japan, and are transferred later to the Commonwealth hospital. From Japan the seriously wounded come home by air as soon as they are fit enough to travel. The flight to Britain takes five or six days. A certain number of casualties return by sea.

In the early stages of the fighting, when things were going badly for United Nations troops, H.M. Hospital Ship *Maine* did very valuable work in transporting American and British casualties from Korea to Japan.

MOBILE ARMY SURGICAL HOSPITALS

The M.A.S.H. has lately been introduced by the Americans. It differs from our own casualty-clearing station (C.C.S.) in being limited to 100 beds and to surgical cases. It is more mobile than the C.C.S., but it may prove of less general value than the C.C.S., especially in tropical countries where acute medical conditions are often a big medical responsibility. The static lines in Korea are not a thorough test of its value, although the widespread use of antibiotics seems to have reduced the number of medical cases needing admission to hospital.

HELICOPTERS

A special feature of the Korean campaign has been the use of helicopters in the evacuation of wounded. These aircraft, flying between regimental aid-post and M.A.S.H., have made it possible to give full surgical treatment to serious casualties within one to three hours of the man being wounded. It has therefore been necessary to stop giving fluids by mouth in the regimental aid-post to those injured who will be taken quickly to the surgeon in this way. In one period of ten months 254 serious casualties were evacuated from the British zone by helicopter; 154 of these were wounded, and 100 represented other emergencies, including medical conditions.

TYPES OF WOUND

The type of wound sustained in battle clearly depends a great deal on the weapon causing it. One analysis of wounds in the Korean campaign was as follows:

Mortar wounds	37%
Bomb and grenade wounds	21%
Gunshot wounds	17%
Shell and high-explosive wounds	12%
Mines	6%
Battle accidents	6%
Burns	1%

This distribution is not unlike that seen during certain periods of the late war in Europe. The risk of burns in battle has increased steadily over the last fifty years; and the low proportion of burns in this list is unusual. Accidental napalm burns have shown no clinical differences from burns of equal severity due to other agents,

such as phosphorus and petrol; and the full thickness of the skin was not invariably destroyed.

TREATMENT

The efficiency of the evacuation plan and the surgical arrangments has undoubtedly meant that a greater proportion of seriously wounded men have been saved than was the case in the major battles of 1939–45. Our own units have continued to use plasma as the chief means of replacing colloids and electrolytes in initial treatment; serum jaundice was occasionally troublesome in the early months. Plasma is available to our forward units from British or Canadian sources; and when fresh blood is needed it is obtained from donors on the spot or from Commonwealth headquarters in Japan. The Americans have depended more on fresh blood, which has been flown from the U.S.A. in large quantities. Dextran is being used by both Commonwealth and American medical units.

For wounds of the limbs and trunk delayed primary suture has been used in Japan, after a thorough primary excision and toilet at the M.A.S.H. five days earlier. Penicillin in full doses has been given as a routine from the day of wounding; and very few penicillin-sensitive organisms have been found in the wounds on arrival in Japan. A proportion of the burns have been treated at Kure by the open-exposure method, which has given good results; but exposure is not a practicable method during evacuation. Men with deep burns have stayed at Kure until the primary resurfacing of the burned area has been completed. Treatment has been based on surgical excision of sloughs, and, in extensive damage, on multiple early free-grafting, chiefly with patch grafts. The massive wounds have also been promptly covered by free-grafting both at the M.A.S.H. and in Japan.

RESULTS

The results seen when the casualties return to this country leave no doubt that a very high level indeed of primary reparative surgery has been maintained—particularly by delayed primary suture. Burns with full-thickness skin-loss have arrived in England healed, with a complete primary skin surface, six to eight weeks after injury. Massive wounds of the limbs and trunk, often with multiple fractures, have healed quickly with early skin cover. Although exact figures are not available, quite exceptional results seem to have been obtained after wounds penetrating the abdomen and the dura; here helicopter evacuation has been of the greatest importance. The high quality of the units fighting for the United Nations in Korea is clearly matched by the standard of the medical services helping to support them.

METHODS OF TEACHING

THE traditional techniques of medical teaching, in the lecture-theatre, at the bedside, or in the out-patient department, have drawn some fire in the past few years. The importance has often been urged of teaching the teacher to examine his methods critically and to adapt them to the particular needs of his subject and his students. Moreover, it has been argued that the student should fend more actively for himself by taking a dynamic part in his own education. Means to these ends were among the matters discussed at a conference on the Technique of Medical Teaching held at the Post-graduate Medical School of London on Jan. 9 and 10. The conference, which was the third of its kind sponsored by the medical school,[1] included for the first time a number of short demonstrations of teaching methods, given by members of the staff to students borrowed for the afternoon from St. Mary's Hospital.

1. See *Lancet*, 1951, i, 1408.

TEACHING AND LEARNING

At one of the sessions, Prof. G. PAYLING WRIGHT discussed the balance between teaching and learning. He thought that the emphasis in our medical schools was on teachers teaching, rather than on students learning. The medical student could with advantage be called on for more emotional and intellectual activity during his own education; for the object of his training was to turn out a doctor who could stand alone, independent of his teachers, and who could continue to learn by his own efforts. To keep abreast of medical progress, most doctors had to rely very largely on their reading; and students should be introduced to library work and methods, with which few of them gained any close acquaintance at present. How many students knew, for example, how to use the *Cumulative Index Medicus* or the *Index Catalogue* of the Surgeon-General? If the student spent more time in the medical school library, not in systematically reading the standard textbooks but in following up the conditions he saw in his patients from day to day, he would fortify the intellectual stimulus by the emotional one which sprang from his contact with the patient and his problems.

Professor Payling Wright said that the plan of trying to teach general principles in the early stages of the clinical course might have to be modified. He thought that lectures for junior students should provide them with a good deal of factual knowledge, which they must acquire before they could appreciate the general principles. It was not until later in the clinical period that the stimulating and inspirational type of lecture became more suitable. A tutorial system could usefully supplement the lecture course and encourage more active learning: at Harvard, for example, small groups of clinical students met in the evenings to discuss with their tutor, and perhaps with a member of the hospital staff, a paper prepared and presented by one of the students. Another help was a journal club which met fortnightly or so to consider recent articles in the leading medical journals.

Sharing the general concern at the size of the medical curriculum and the stress it placed on the student, Professor Payling Wright suggested that preclinical subjects be taught and examined at two levels, and that the student be given the option of taking, say, either anatomy or physiology at the higher level. Such a provision for specialisation at quite an early stage in his career would relieve the student of some of his burden. Much of the day-to-day teaching of anatomy was given by graduates working for the primary fellowship examination, who tried to raise the student's knowledge to what was, in Professor Payling Wright's view, an unreasonably high level for all to attain.

As a means of improving and maintaining the standard of clinical teaching, Professor Payling Wright commended the staff round which was a regular feature in many American teaching centres. This round, which was generally restricted to senior members of the staff, stimulated enlivening debate among the teachers and so brought out new ideas which were presently reflected in the teaching to students.

Prof. J. MCMICHAEL agreed that the staff conference was the best way of keeping teachers up to date and in tune with one another; and Prof. IAN AIRD, recalling some lively meetings he had attended in the United States, pointed out that the staff round in this country lacked the historical prestige that it enjoyed there, and that in consequence busy consultants were not always ready to set aside two or three hours each week for this purpose.

TEACHING DEMONSTRATIONS

The young men who tackled the discouraging task of teaching before teachers did well to demonstrate, in

a few minutes each, the methods best suited to their particular subject: Dr. J. VALLANCE-OWEN taught on physical signs in the chest; Dr. I. MCINTYRE illustrated a convenient method of determining the alkali reserve; Dr. G. A. K. MISSEN questioned his class on a specimen of bacterial endocarditis from the pathology museum; Mr. H. H. BENTALL discussed a swelling in the breast at his ten-minute outpatients; and Dr. E. S. CLARKE guided his students through the examination of a man with a neurofibroma pressing on the cervical cord.

Some of the audience found it hard to see and follow all the details; but this was no serious criticism, for the methods used were designed for a more intimate atmosphere than that of the lecture-theatre.

Discussing the technique of outpatient teaching, Dr. R. C. MAC KEITH suggested that a session set aside largely for teaching, with only four patients instead of the usual dozen or more, would help the teachers, who often found it difficult to give students the time they needed to reach their diagnosis. On the other hand, Professor AIRD thought that the steady stream of patients brought the pages of the textbook to life in a very profitable way. Professor MCMICHAEL added that a particular value of outpatient teaching was the opportunity it gave for students to see patients who had recovered, often from diseases with a serious prognosis.

HEALTH UNDER INDIA'S FIVE-YEAR PLAN

UNDER India's first Five-Year Plan, approved by both houses of parliament, the health programme embraces the following priorities: (1) provision of water-supply and sanitation; (2) control of malaria; (3) preventive health care of the rural population through health and mobile units; (4) health services for mothers and children; (5) education and training and health education; (6) self-sufficiency in drugs and equipment; and (7) family planning and population control. The medical and public-health plans of the central and State governments will cost Rs. 995·5 million. The central government will aid the States in higher education and research and in certain specific schemes.

Of the total outlay on medical programmes, more than 50% will be on hospitals and dispensaries, and nearly 40% on medical education and training, in addition to the establishment of the All-India Medical Institute, the completion of new medical colleges in Assam, Bombay, Madras, Madhya Pradesh, West Bengal, and Travancore-Cochin, upgrading of existing medical schools, and provision of training for auxiliary medical personnel including nurses, midwives, and compounders.

The execution of these schemes is expected to increase the total number of personnel trained thus:

	NUMBER TRAINED DURING YEAR ENDING 1950–51	1955–56	Increase %
Doctors	2504	2782	11·1
Compounders	894	1621	81·3
Nurses	2212	3000	35·6
Vaids and hakims	914	1117	22·2

The increase in the number of hospitals and dispensaries and the number of beds in them is expected to be as follows:

	During 1950–51	By 1955–56	Increase %
No. of hospitals	201	206	2·4
No. of dispensaries			
Urban	1358	1695	24·8
Rural	5229	5840	11·6
No. of beds in hospitals	106,478	117,222	10·1
No. of beds in dispensaries			
Urban	2013	2233	11·4
Rural	5066	5582	18·2

The expenditure on public-health programmes undertaken by the central and State governments is Rs. 503·8 million. Water-supply, drainage, and anti-malaria schemes account for the bulk of the expenditure.

Malaria is the most important public-health problem in India, and its control is naturally accorded the highest priority. Over Rs. 170 million has been provided in the plan for malaria control. The operational programme in the malaria plan is based on the use of insecticidal residual spraying in rural areas, protecting 200 million people, and treatment with anti-malaria drugs. The plan also embraces the construction of two D.D.T. plants to ensure sufficient supply of D.D.T. at reduced costs. This project is financed jointly by the central and the State governments.

Tuberculosis ranks next in importance to malaria as a health problem to India. In this case the schemes generally relate to sanatoria, hospitals, and clinics, to B.C.G. vaccination teams. Compared with 1950–51 the plan envisages the following increase by 1955–56:

	1950–51		1955–56	
	No. of institutions	No. of beds	No. of institutions	No. of beds
Sanatoria	37	4161	46	5656
Hospitals	48	3077	50	4814
Clinics	127	2323	180	2562

Specific recommendations have also been made for the control of venereal diseases, for maternity and child welfare, for medical education, and for research.

The recent steep increase in the population of the country has brought to the fore the urgency of family planning and population control. Family limitation is deemed both desirable and necessary for safeguarding the health of the mother and for the better care and upbringing of the children. The Five-Year Plan provides Rs. 6·5 million for family-planning measures. It also suggests the constitution of policy and research committees, and a population commission at a later date.

NEW YEAR HONOURS

THE list appearing in our last issue omitted the names of two members of our profession on whom honours have been conferred. They are:

Knight Bachelor

FRANK PERCIVALE MONTGOMERY, M.C., M.B. Belf., F.F.R. Consulting radiologist, Down County Infirmary and Ulster Hospital for Children and Women.

C.B.E. (Civil)

LOUIS BOYD NEEL, M.B.C.S.
Musical director; founder of the Boyd Neel Orchestra.

In the community of Northern Ireland Dr. Montgomery holds a leading position won by distinction in several different fields, including that of International rugby; and his public work has latterly included the chairmanship of the Northern Ireland Hospitals Authority.

Medicine and the Law

Fatal Poisoning by Mothballs

A BOY, aged 21 months, died the day after he had eaten a number of mothballs which he found in a wardrobe in his home. At the inquest at Bromley, Kent, on Jan. 8 [1] the pathologist reported that the child died of a respiratory failure which was in keeping with naphthalene poisoning. He added that the literature on the subject tended to suggest that the majority of such cases were not fatal. Asked whether there was no antidote to mothball poisoning, he replied: "As far as we know there is none." The coroner inquired: "Assuming the stomach had been washed out early enough and thoroughly enough, could the child still have absorbed the poison?" "Yes. The poison could have got into the intestines and affected the liver."

Recording a verdict of death by misadventure, the coroner warned parents to regard mothballs as a dangerous poison which should be kept out of reach of children.

1. *Manchester Guardian*, Jan. 9, 1952.

Public Health

AN EXPLOSIVE OUTBREAK OF Q FEVER

M. G. P. STOKER
M.D. Camb.
LECTURER IN PATHOLOGY, CAMBRIDGE UNIVERSITY

J. F. THOMPSON
M.R.C.S.
GENERAL PRACTITIONER, WOODCHURCH, KENT

ISOLATED sporadic infections probably account for most cases of Q fever, but it is well known that severe explosive outbreaks also occur, and indeed their spectacular nature has often led to the first recognition of the disease in a particular locality. One such outbreak at a London hospital in 1949 gave the first definite proof that the disease existed in Great Britain (Harman 1949, MacCallum et al. 1949), and, since the source of this outbreak was a fatal case of Q fever from North-East Kent (Marmion and Stoker 1950), attention was soon directed to this county, where the disease was discovered to be endemic. Many sporadic cases were found (Marmion et al. 1953), and in the following year a second outbreak involved 27 students at the Canterbury School of Art. Although the source of infection was not clearly identified here, epidemiological evidence suggested that the opening of a packing-case and the removal of straw and other packing material some nineteen days before the outbreak may have been responsible (Harvey et al. 1951).

This paper describes a third outbreak, distinguished by a remarkably high attack-rate, which took place in September, 1951, amongst residents and visitors at a farm in South Kent.

THE OUTBREAK

The farm occupies some 120 acres on high ground overlooking Romney Marsh, and includes a farmhouse, divided into two flats, immediately surrounded by cowsheds, a dairy, and pigsties, with two cottages, which lie at the edge of the farm some 250 yards from the house. On land adjoining the farm there is a short row of council cottages, where the two domestic helps at the farm live; but otherwise the farm is fairly isolated. A dairy herd of tuberculin-tested attested Red Poll cattle and some pigs and poultry form the main business of the farm.

The farmer, Mr. F., and his wife, live on the ground floor of the farmhouse, and a family, comprising Colonel T. (an engineer temporarily home from Kenya), his wife, and two daughters, Maureen and Jill, occupy the upstairs flat. Mr. C., a retired business man, and his wife, who are friends of the farmer, have one of the cottages, and Mr. J. (cowman at the farm) and his wife the other.

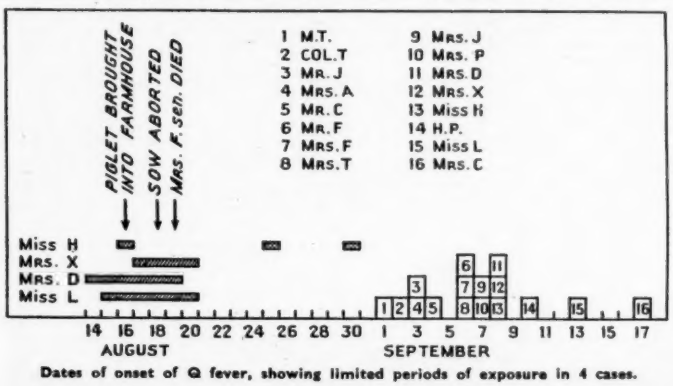
On Sept. 1, 1952, Maureen T., aged thirteen, became ill quite suddenly with a headache and fever. Next day her father, Colonel T., who had just returned from five days in Scotland, developed a more severe illness with pneumonia, and he was admitted to Ashford Hospital on Sept. 8. Meanwhile, on Sept. 3, the cowman, Mr. J., became ill, and during the next three days his wife, his neighbour, Mr. C., the farmer himself, his wife, and Colonel T.'s wife also succumbed. By Sept. 7 everyone living on the farm was ill with what was later shown to be Q fever, except for Mrs. C., who did not develop the disease until Sept. 17, and Jill T., aged five, who remained well, but later showed serological evidence of infection. All this came at a busy time, and for a few days there was great difficulty in running the farm; but fortunately many of the illnesses were short and mild.

TABLE I—PERMANENT RESIDENTS, TEMPORARY RESIDENTS, AND VISITORS TO FARM FROM AUG. 13 TO 26, 1951

—	Name	Age	Occupation or status	Visits to farmhouse Aug. 13–26, 1951	Onset of Q fever
Living at farmhouse	Mr. F.	48	Farmer	Resident	Sept. 6
	Mrs. F.	32	Farmer's wife	,,	Sept. 6
	Mrs. F., sen.	76	Farmer's mother (invalid, died Aug. 19)	,,	—
	Mrs. P.	56	Relatives on visit from Berlin (returned Sept. 2)	,,	Sept. 7
	Helga P.	8		,,	Sept. 10
	Colonel T.	44	Relatives living in upstairs flat	,,	Sept. 2
	Mrs. T.	45		,,	Sept. 6
	Maureen T.	13		,,	Sept. 1
	Jill T.	5		,,	—
Living at cottages on farm	Mr. J.	29	Cowman to farm	Daily	Sept. 3
	Mrs. J.	26	Cowman's wife	Aug. 6	Sept. 7
	Mr. C.	45	Retired (friends of farmer)	Frequent	Sept. 4
	Mrs. C.	44		,,	Sept. 17
	Mrs. X.	35	Weekend visitors from London (staying with Mr. and Mrs. C.)	Aug. 17–20	Sept. 8
	Bruce X.	10		Aug. 17–20	—
	Miss L.	45		Aug. 15–20	Sept. 13
Visitors to farmhouse	Mr. Y.	58	Casual labourer	Uncertain	—
	Miss H.	42	Friend of Mrs. A.	Aug. 16 and 25	Sept. 8
	Mrs. D.	56	Domestic help	Aug. 14–19	Sept. 8
	Mrs. A.	44	,,	Daily	Sept. 3
	Vivienne A.	4	Daughter of Mrs. N.	Daily	—
	Dr. W.	38	Attending Mrs. A., sen.	Aug. 14, 16, 18–20	—
	Dr. V.	51	,,	Aug. 20	—
	Nurse N.	46	District nurse	Aug. 13–19	—
	Mr. B.	32	Undertaker	Aug. 20	—
	Mr. Z.	46	,,	Aug. 19–20	—

From the dates of onset it seemed likely that infection had taken place sometime in the third week of August. When inquiries were made it was found that there had been 6 extra people living on the farm at about this time (see table I and figure).

Firstly, there had been the farmer's invalid mother (Mrs. F., sen.), who had died of carcinoma of the rectum on Aug. 19. Secondly, his mother-in-law (Mrs. P.) and her granddaughter (Helga P.) had been on a visit from Germany, and they had returned to Berlin on Sept. 2, where they both developed Q fever the following week. Finally 3 visitors from London, Miss L., Mrs. X., and her son Bruce, aged ten, had stayed with Mr. and Mrs. C. at their cottage for a long weekend. Three weeks after their return to London, Mrs. X developed an illness which was assumed to be Q fever on clinical and epidemiological grounds, despite the fact that a specimen of her blood could not be obtained for serological confirmation. Bruce remained well and his serum was not tested, but Miss L. succumbed five days later to a similar illness, and her serum was subsequently found to contain Q fever antibodies.



Dates of onset of Q fever, showing limited periods of exposure in 4 cases.

In addition to the 16 residents, and excluding tradesmen who only made very short visits, 9 other people had visited the farm during the two weeks Aug. 13–26. Miss H., a friend from Rye, spent the afternoons of Aug. 16 and 25 at the farmhouse, and Mr. Y., a casual labourer, worked on the farm. There were two domestic helps (Mrs. D. and Mrs. A.) at the farmhouse, and

one of them regularly brought her daughter. Of these, Miss H. and both the domestic helps developed Q fever in September. The family doctor (Dr. W.) and district nurse (Nurse N.) attended old Mrs. F. before she died, and another doctor (Dr. V.) and 2 undertakers (Mr. B. and Mr. Z.) visited the farm after her death ; but these 5 paid only short visits, and none of them developed Q fever.

After excluding Mrs. F., sen., there were in all 25 people at risk. Of these, 5 adults had no clinical or serological evidence of infection, but 4 of them had paid only short visits to the farm. One child remained well, but the presence of Q-fever antibodies six months after the outbreak suggested a subclinical infection. An adult and 2 children also remained well, but no serological tests were performed. All the other 16 adults developed clinical Q fever ; this included everyone over the age of twelve who was living on the farm at the time of exposure.

CLINICAL PICTURE

Although the attack-rate in this outbreak was unusually high and subclinical infections were rare, the clinical picture was very like that described in previous outbreaks and groups of sporadic infections. Sudden onset with severe headache and fever was common to all, but clinical signs of pulmonary involvement were found in only 5 patients. (In most cases X-ray examination was carried out too late to be of value.) There were the usual wide variations in severity ; 9 patients had mild febrile illnesses lasting less than a week, while 7 had more severe attacks lasting between one and seven weeks. Symptomatic treatment only was given to most patients, and no noticeable benefit followed the use of a sulphonamide, penicillin, or streptomycin. 6 patients were given chloramphenicol in various doses, starting between two and eight days after the onset, and they responded well. The 2 oldest patients had the longest illnesses, lasting seven weeks and three weeks respectively, as the following case-histories show.

Mrs. P., the farmer's mother-in-law, aged fifty-six, was taken ill in Berlin on Sept. 7 with severe headache, fever, sweating, and insomnia. Her condition improved slightly during the next day, but she became suddenly worse and was admitted to hospital on Sept. 12 with dyspnœa, cyanosis, and signs of pneumonia of the left lower lobe. Sulphonamides and penicillin produced no response, but on Sept. 15 news of the other illnesses at the farm (not then diagnosed) reached her doctor, who immediately suspected Q fever and gave chloramphenicol. The patient's temperature promptly fell to normal, but rose again when supplies of chloramphenicol ran out on Sept. 24. There were now no radiological signs of pneumonia, but the patient was still very ill, and fever continued until fresh supplies of chloramphenicol became available and were given on Oct. 13. The temperature again fell and her condition improved, but there was a further relapse as soon as the drug was stopped on Oct. 20. However, after a third course, ending on Nov. 2, the patient remained well and was discharged from hospital on Nov. 19. The diagnosis of Q fever was confirmed by a rising titre of Q-fever antibodies.

TABLE III—PIGS ON FARM, WITH DATES OF PARTURITION AND RESULTS OF LABORATORY TESTS

Name	Litter born	Serum tested	Result *
Snotch ..	Aug. 10, 1951	Jan. 28, 1952	Negative
Blowey ..	Aug. 10, 1951	Jan. 28, 1952	Negative
Lady pig..	Sept. 4, 1951	Not tested	—
Frirt ..	Aug. 18, 1951	April 10, 1952	Non-specific reaction
Squib ..	Not pregnant	Not tested	—
Piglets :			
Snotch 1–4	—	Jan. 28, 1952	Negative
Snotch 5	—	April 10, 1952	Non-specific reaction
Blowey 1–4	—	Jan. 28, 1952	Negative

* Pig sera were tested by the hæmolytic complement-fixation test, the conglutinating complement-absorption test, the agglutination test, and the anti-globulin-sensitisation test. Non-specific reactions were obtained with typhus as well as Q-fever antigens in the anti-globulin-sensitisation test.

Mrs. D., aged fifty-six, one of the domestic helps, felt ill on Sept. 8, but, in spite of a feverish headache with pains in her neck and limbs, she tried to continue her work. On Sept. 12 she took to bed, and was found to have signs of a bilateral basal pneumonia. A diagnosis of virus pneumonia was made and she was given 0·25 g. of chloramphenicol four-hourly up to a total of 6·0 g. In spite of the low dosage, her temperature fell to normal in thirty-six hours, and the signs in her chest rapidly cleared, but she remained very debilitated indeed and was confined to bed for three weeks.

With the exception of Mrs. X., one of the visitors from London, whose illness was diagnosed on clinical grounds alone, all the patients had Q-fever antibodies in their serum when it was tested later. Mrs. P.'s serum showed a rise in antibody titre from 1 in 128 to 1 in 512, and in the others the titres varied between 1 in 40 and 1 in 320 in specimens taken about one month after the illness. The blood of 2 patients was not examined until later, and both showed Q-fever antibody titres of 1 in 20, while serum from Jill T., who was not ill at all, also had a titre of 1 in 20 when tested six months after the outbreak.

SOURCE AND MODE OF INFECTION

The explosive nature of the outbreak suggested the exposure of completely susceptible individuals to a single large dose or to an unusually infective strain of *Rickettsia burneti*. The peak of the outbreak was reached on Sept. 6–8, and the mean day of onset was Sept. 7, so that, with the usual incubation period of about nineteen days, infection would have taken place about Aug. 19. This gives a minimum incubation period of thirteen days for Maureen T., and a maximum of twenty-nine days for Mrs. C. Fortunately 4 of the patients had visited the farm for short periods only during August, which suggested that infection must have occurred between Aug. 16 and 19 (see table I and figure). Only 7 of the patients had been to the cottages, whereas all had visited the farmhouse or outbuildings during this period, except for Mrs. J., the cowman's wife, who could not remember visiting the farmhouse after Aug. 6. However, infection could well have been carried to Mrs. J.'s cottage by her husband's clothes or in the milk.

TABLE II—COWS ON FARM, WITH DATES OF PARTURITION AND RESULTS OF LABORATORY TESTS

Name		Calved	Pooled milk of Oct. 27, 1951, tested for *R. burneti* by guineapig inoculation	Serum-antibody titres, Jan. 26, 1952 (complement fixation test)	Whey-antibody titres in individual samples	
					Direct agglutination	Anti-globulin-sensitisation test
In milk Aug. 13–26, 1951	Dulcie	Dec. 13, 1950	—	<1 in 8	<1 in 2	<1 in 2
	Daphne	Jan. 14, 1951	Negative	<1 in 8	<1 in 2	<1 in 2
	Dot	Nov. 29, 1950	—	<1 in 8	<1 in 2	<1 in 2
	Dally	Feb. 9, 1951	Negative	<1 in 8	<1 in 2	<1 in 2
	Ruby	Jan. 24, 1951	—	<1 in 8	<1 in 2	<1 in 2
	Dancer	Oct. 26, 1950	—	—	<1 in 2	<1 in 2
	Dawn	Jan. 30, 1951	Negative	—	<1 in 2	<1 in 2
Dry Aug. 13–26, 1951	Dora	Sept. 2, 1951	,,	—	<1 in 2	<1 in 2
	Dillis	Sept. 10, 1951	,,	<1 in 8	—	—
	Diana	Oct. 17, 1951	,,	—	<1 in 2	<1 in 2
	Dilly	Feb. 1, 1952*	—	—	1 in 16	1 in 64
	Della	March 24, 1952†	—	—	<1 in 2	<1 in 2

* In milk to Aug. 5, 1951 ; then dry and pastured 2 miles from farm. † Heifer, also pastured 2 miles from farm in August, 1951.

The Farm Animals

None of the patients had been bitten by ticks, and there were no sheep or goats on the farm. The most likely source of *R. burneti* was obviously milk, placenta, or fæces from one or more of the 12 dairy cows, but the sequence of infections among the people on the farm implied that any excretion of organisms by the cows must have been a new event occurring for the first time between Aug. 16 and 19. It was therefore surprising to find that nothing unusual had happened in the herd at this time. No new cows had been imported, no calves were born until Sept. 2, and the same 7 cows had been in milk for the previous seven months. This milk was used at the farmhouse and at one of the cottages. Mr. and Mrs. C. at the other cottage obtained their milk from a different source, but they did occasionally have tea at the farmhouse. The bulk of the milk went to a wholesale dairy where it was pasteurised.

Of the 5 cows not in milk, 2 were pastured in a field nearly two miles from the farm; 4 of the patients had visited this field on various occasions, but had had no close contact with the cows.

Various laboratory tests were made on material from the cows during the succeeding months, and the results are shown in tables II and III. We originally intended to take serum samples from all cows, but foot-and-mouth disease restrictions prevented us doing so. However, it has been shown that there is close correlation between whey and serum antibodies (Stoker and Marmion 1952), and specimens of whey were eventually tested by the direct agglutination and anti-globulin tests instead. One cow, Dilly, had Q-fever antibodies in her whey, but she was one of the two animals who had been dry and pastured in a field two miles from the farm. None of the animals kept on the farm itself showed any evidence of infection. The laboratory tests thus support the epidemiological evidence in suggesting that the cows were not responsible for this outbreak.

There was considerable activity in the piggery during August, but although Giroud and Jadin (1951) claim to have demonstrated Q-fever agglutinating antibodies in pigs from the Belgian Congo, these animals have never been shown conclusively to harbour *R. burneti*. Nevertheless, it was interesting to learn that two litters of piglets were born at the farm on Aug. 10 and that a sow aborted on Aug. 18. One of the piglets was injured by a rat, and on Aug. 16 it was brought into the farmhouse for treatment. It was fondled by several individuals who subsequently developed Q fever, including Miss H. who must have been infected on that day or on Aug. 25 (see figure). This piglet might have been heavily contaminated with infected placental fluid from a sow; so, when the farm was first visited on Oct. 27, sebaceous material was scraped from the piglet's ears and a suspension was inoculated into guineapigs and mice; but *R. burneti* was not isolated. Serum was also obtained from this piglet, from the 3 sows which were delivered in August, and from 8 other piglets. Pig antibodies are notoriously difficult to detect by ordinary techniques, and of course positive pig sera were not available for controls; but the hæmolytic complement-fixation test, the conglutinating complement-absorption test, the direct agglutination test, and the anti-globulin sensitisation test (Coombs and Stoker 1951) all gave negative or non-specific reactions.

As well as the cattle and pigs, there were chickens, ducks, cats, a horse, and a dog on the farm. It was not possible to bleed these animals, but none of them had arrived on the farm in the middle of August.

Other Possible Sources

The body of a patient who has died of Q fever may be highly infective (Marmion and Stoker 1950), and since Mrs. F., sen., died on Aug. 19, there was a possibility that she might have had unrecognised Q fever. On the other hand, there was absolutely no doubt that she died of carcinoma of the rectum with widespread secondary deposits, and there was no evidence of terminal pneumonia. Neither the doctors, the nurse, nor the two undertakers developed Q fever; and there was no illness at the laundry where the bedding was washed. Another possible source was some furniture and tinned food brought to the farm by Colonel T. from a flat in London which had been vacated after a tenant had died, but this death was later discovered to have been accidental. Lastly, there was a rubbish tip adjoining the farm, but none of the dustmen who used it had been ill at the time of the outbreak.

DISCUSSION

The main interest in this outbreak lies in the very high attack-rate among the people at risk. Of the 15 residents, all the 12 adults and 1 child became ill; another child may have had a subclinical infection and one (Bruce X.) was not tested. Only 3 of the 9 non-resident visitors developed Q fever, but these were the 3 who probably spent longest in the farmhouse. In fact, with only 1 exception, all the 16 adults who were on the farm for more than brief visits between Aug. 12 and Aug. 26 developed clinical Q fever. The exception was the casual labourer, Mr. Y., whose movements were difficult to trace and who may have been absent at the critical time.

The rate of infection was thus 100% among the residents who were tested and 77% among the total population at risk; and this is higher than the rate reported for any previous outbreak, except those described by Babudieri (1951) and del Turco et al. (1951) in Italy. It is possible that the individuals at risk were unusually susceptible, but a highly infective strain or the release of unusually large numbers of organisms are more likely reasons for the high attack-rate. It is therefore all the more disappointing that the source of infection was not identified, particularly as the dates of infection were known to within narrow limits. At first sight the cows were certainly the most obvious reservoirs of *R. burneti*, but laboratory tests revealed no evidence of infection in the animals on the farm at the time of infection, and on epidemiological grounds the pigs were far more likely to have been the source, despite the fact that they are not a recognised reservoir of Q fever.

Clinically the outbreak followed a typical course, and it is interesting to note the wide variation in the lengths of the illnesses (the longest being those of the 2 oldest patients) and the rapid response to chloramphenicol.

SUMMARY

In an explosive outbreak of Q fever in South Kent, 13 out of 15 people living on a dairy farm contracted the disease, 1 child had a subclinical infection, and 1 was not tested. There were 3 other cases among 9 visitors to the farm.

Epidemiological findings and laboratory tests did not suggest that the cows were the reservoir of infection. Although there was some evidence pointing to pigs as the source, it was not possible to confirm this in the laboratory.

We are indebted to the owner of the farm and to his wife for their kind coöperation; to Mr. J. D. Paterson, M.R.C.V.S., of the Veterinary Investigation Centre, Wye, who took the serum specimens from the animals; to Dr. Krüger, who kindly sent details of his patient from Berlin; and to Miss Z. Page for valuable technical assistance.

REFERENCES

Babudieri, B. (1951) *Acta med. ital.* **6**, 29.
Coombs, R. R. A., Stoker, M. G. P. (1951) *Lancet*, ii, 15.
del Turco, L. R., Davoli, R., Signorini, L. F. (1951) *Ann. Sanità. publ.* **12**, 19.
Giroud, P., Jadin, J. (1951) *C.R. Acad. Sci., Paris*, **231**, 86.
Harman, J. B. (1949) *Lancet*, ii, 1028.
Harvey, M. S., Forbes, G. P., Marmion, B. P. (1951) *Ibid*, ii, 1152.
MacCallum, F. O. M., Marmion, B. P., Stoker, M. G. P. (1949) *Ibid*, ii, 1026.
Marmion, B. P., Stoker, M. G. P. (1950) *Ibid*, ii, 611.
— — McCoy, J. M., Malloch, R. B., Moore, B. (1953) *Ibid* (in the press).
Stoker, M. G. P., Marmion, B. P. (1952) *J. Hyg., Camb.* **50**, 1.

The Third Quarter in England and Wales

Provisional figures for England and Wales in the September quarter, 1952,[1] show that the death-rate equalled the lowest ever recorded for the country, while the infant-mortality rate and the stillbirth-rate were the lowest ever recorded.

The death-rate was 8·9 per 1000 population. The infant-mortality rate was 23·0 per 1000 related live births. The stillbirth-rate was 21·5 per 1000 total live and still births. The birth-rate was 15·2 per 1000 population—the same as in the September quarter of 1951.

The estimated total population of England and Wales at June 30, 1952, was 44,166,000 (21,343,000 male and 22,823,000 female)—an increase of 158,000 over the estimate for 1951.

Control of Narcotic Drugs

The control of the Permanent Central Opium Board over the licit movement of narcotic drugs is largely based on the information supplied by the governments producing the raw materials. It is the more disturbing therefore that in their report for 1952[2] the board deplore the "vagueness which characterises the statistics of the principal non-producing countries." Thus the total world production of opium is not accurately known; while that of coca leaves cannot be conjectured, because Bolivia and Peru, two of the four producing countries, have never submitted statistics of their production. But statistics of the use of these substances for medical and scientific purposes are almost complete, and the board draw attention to the "steady and remarkable increase in the production of codeine during the last two decades." In 1951 for the first time codeine was converted into morphine; 26 kg. of codeine produced 18 kg. of morphine. The board suggest that as a result some change in the control exercised over codeine may be called for. The board also point out that though synthetic narcotic drugs are being more widely used than ever there is no decline in the use of the chemical derivatives of opium.

Cancer Registration in Denmark

On May 5, 1942, the Danish Cancer Register was inaugurated by the Danish National Association for Combating Cancer, with the support of the Danish public-health authorities, the Danish Medical Association, and other bodies. The primary object of this register, the first of its kind organised on a national basis, was to investigate the incidence of malignant disease in Denmark and elsewhere. It was to be an endemiological or epidemiological investigation not concerned with the results of the treatment of malignant disease.

In his survey of the first ten years, Dr. Johannes Clemmesen,[3] who is in charge of the register, points out that all the Danish hospitals send in reports of every case of neoplasm; pathological institutes also send necropsy and histological diagnoses. Furthermore, the staff scrutinise all the death certificates for Denmark; so account is taken of the fatal cases of cancer not passing through a hospital.

During the past decade studies in Denmark of heredity in relation to malignant disease have suggested that it is easier to establish the influence of heredity on cancer of the body of the uterus than on cancer of the cervix. The records of the register show that cancer of the left breast is more common than that of the right breast, in the ratio of 111 to 100, and that close relatives of a patient with breast cancer are more likely to develop disease of the breast on the same side than on the opposite side. The register has also disclosed a remarkable rise in the mortality from cancer of the lung in males in Copenhagen, where the death-rate from this cause has risen from 5 per 100,000 population in 1931 to 37 in 1950; in the same period the rate for women has only risen from 4 to 5 per 100,000.

1. Registrar-General's Quarterly Return No. 415. H.M. Stationery Office. Pp. 26. 2*s.* 6*d.*
2. United Nations Publication. Geneva: 1952. XI. 11. Pp. 75. $0.70.
3. *Nord. Med.* Dec. 19, 1952, p. 1751.

In England Now

A Running Commentary by Peripatetic Correspondents

ONE day in the pride of my first house-appointment I overheard a stout lady confide to Sister in a hoarse undertone "Ah want tae see a right doctor. Thon's jist a laddie." This balanced judgment, I found, merely crystallised into words a fairly general feeling, and many of my associates have subsequently been troubled by the suspicion that I may not, in spite of my now advancing years, be a right doctor. Since I embraced academic life the suspicion has, for most of them, hardened into a certainty. To the layman, the idea that anyone could voluntarily take such a manifestly wrong turning is a strange one. "Do you mean people call you Doctor?" they ask, over the weekly canasta table. "Oh," they say, "how odd." And a little silence falls, while they glance furtively at the leather patches on my elbows and then stare speculatively at their own husbands. When they get home they tell each other how sad it all is.

The neighbours have given us up professionally long ago. When we first moved in they used to send their children round, attracted by the prospect of a free medical service just over the fence, and a stand had to be taken. "You see, he's not that kind of doctor," my wife explained, "he does research." "Oh," they say doubtfully, "really?" It is only too clear that they don't believe a word of it. They have agreed on a harmless convention whereby they refer to me as Doctor when they think I may be listening, and as Mister when they are reasonably sure I am not.

Such a reaction does little to alleviate my own distrust of my rapidly receding clinical acumen. As a student I once cut myself badly during an access of zeal for the study of anatomy, and confidently approached my preceptor, an anatomist of twenty years' standing, loaded with higher degrees and fellowships. "Oh yes," he said hesitantly, peering into the spurting depths, "that's a nasty one; you'd better see a doctor." With what scorn did I relate this tale to my friends, for from whom should one expect surgical treatment if not from an F.R.C.S.? The other day came retribution. One of the lab. assistants, in the course of an argument with our still, burned his forearm slightly and exhibited the lesion to me. "Oh yes," I said hesitantly, "that's a nasty one; you'd better . . ." "No," I said, "on second thoughts, reach me down the first-aid box." He is still alive, and in the limited sphere of the lab. there is a growing feeling that I may, despite appearances, be a right doctor after all. Only yesterday our histological technician asked me if I would pierce her ears.

* * *

The clinicopathological conferences that the students have started are going well. An interesting case is chosen, particularly where autopsy material is available, and written up in detail, but with some essential points missing. These case protocols are circulated to students and staff two days beforehand, to allow them to wrestle with the case and work out the probable diagnosis. Groups of students can be seen in the medical school heatedly debating the differential diagnoses. At the C.P.C. the "principal performer," who is a member of the staff selected by the students, reads through the protocol and, by deductive reasoning, attempts to reach the correct diagnosis. When he has irretrievably committed himself the audience discuss his conclusions. The radiologist then steps forward and shows the films. Finally the climax is reached as the pathologist uncovers his specimens and shows his slides, to the triumph or mortification of the speaker. The atmosphere is so charged with the competitive spirit that the physician or surgeon who appears enters like a gladiator before the crowd. For the students it is an ideal and entertaining way of learning. One of them said that it was the first time he had heard a physician thinking logically. For the staff it is a somewhat harrowing experience, and even the toughest has shown symptoms of nervous apprehension beforehand.

* * *

With rumbling guts
At Rumbling Bridge
Food-poisoned children
Wish their Mums
Had bought
And used
A fridge.

* * *

We medical dons are sometimes envied by the more successful members of the profession, the real doctors. A nice quiet life, they say, for we have it in malt if not in meal—meaning our holidays, of course. True, academic life is a pulsing affair—the systole of terms with diastoles between. But what they forget is that for many of us all that the vacation means is no lectures, which are after all only a small item of the academic daily round. Unmarked examination papers, unfinished research, unread proofs still await us; the library committee still meets, and autopsies, on mice or men, go on as usual.

And to get down to details, what can anyone make of a January holiday? There's Madeira and Marrakeesh, but we can do those only by brochure. I have slithered half-frozen on the hills, and stumbled over upturned boats in the winter darkness of famous promenades. The Easter vacation is little better. It is too early for comfort, and in the country your only friend is the lesser celandine. But give me June, Mr. Vice-Chancellor, and I'll show you what I can do. He won't, though. Instead, he gives us the heaviest examinations of the year—final honour schools—and students and examiners both sweat away in the first heat-wave. July and August find us still hard at it, for colleagues also need a rest. And so it's September, as often as not truly backendish—whistling winds, heavy rain, leaves flying, and officially too early for fires. No wonder the session starts off with colds and influenza. But October, when the equinoctial gales are over, is often rich in sunshine. By this time, however, we are up to the neck again—coping with the new class, addressing the medical societies, and longing for our January break . . .

* * *

She was describing some small brown mobile objects which had been present in her little boy's urine. "I was very stupid at first, doctor," she said, "because I thought they were tea leaves, but now I've just remembered he doesn't drink tea."

* * *

He belonged to a well-known local family of gipsies, and was suffering from lobar pneumonia, after a night spent in a drunken stupor in a cold, damp ditch. I took appropriate action, and he made a rapid recovery. Later when I pointed out to him the probable ætiological significance of his night's exposure, he asked me whether I would allow him to go into the pub at night, to have just one or two beers, as this was an essential part of his job. When I asked for further details he explained that the greater part of his income came from the buying and selling of lead, and the trading was done in the local. So yet another disease is shown to be connected with this unhappy metal.

Driving back that night I mused on the changing pattern of industrial disease. Will the decreased incidence of Crystal-Gazer's Strabismus and Palmar Argyria be counterbalanced by an increase in Lead-Merchants' Pneumonia and Truncheon Coma? Has the gipsy laid down his fiddle to take up another?

* * *

The Physiologists have long been discouraging about alcohol as a restorative after exposure to cold, and the *Medical Journal of Australia*[1] has lately had harsh things to say about St. Bernard dogs and their flasks of brandy. Alcohol causes the skin blood-vessels to dilate, thereby diverting the warmed blood from the more essential inner organs to the surface of the body where it is promptly cooled. So the *Journal* advises the dogs to carry 'Thermos' flasks of hot milk instead. But of course Sydney is a very long way from Switzerland.

* * *

From an insurance report: "Mr. — — was treated in — Mental Hospital by Electroconsultant therapy."

1. *Med. J. Aust.* 1952, ii, 379.

Letters to the Editor

PRECISION IN DIAGNOSIS

SIR,—Dr. Todd is always stimulating; he manages to put on paper what most of us only ponder on.

Diagnosis literally means knowing through and through: it is the very fullest statement of every aspect of a case. Of course we always use it to mean the exact reverse; it is the shortest possible summary, the label. So let it be. Medicine has little respect for the classics.

A label is a useful thing. Rightly affixed it gets one to one's destination. Wrongly addressed it can misdirect one seriously. The practical exigencies of medicine will always require such labels. We should make them reflect reality as accurately as possible. To that end I enter a plea for the "serial" diagnosis.

Those of us who do general practice in any form know that it is only a tiny minority of illnesses that can be adequately and honestly covered by a single term like "mastoiditis" or "intussusception." The case has actually carried a series of labels, such as "upper respiratory infection," "N.A.D. earache," "otitis media," "mastoiditis for admission," "recent mastoidectomy"; or instead "collywobbles," "colic with constipation," "intestinal obstruction," "intussusception at operation," "stitch abscess." Which one of these the records officer chooses to select for his returns is of little importance. Each in its time has been the correct diagnosis. Case-records both for general practice and for hospitals should be designed with that in mind. Instead of a ridiculous little box in the top corner, one should have space for half a dozen insertions with their dates.

A wider appreciation of the practical inevitability of serial, rather than single, diagnoses would in my view lessen the need knowingly to invoke phoney pathology, such as the usual "fibrositis," "neuritis," or "gastritis." All diagnoses are temporary; most are tentative. A large number of complaints met in general work never need carry their series of labels as far as the pathological diagnosis. They resolve spontaneously or are of such a nature that the labours and sufferings entailed in going further are not warranted by the prospects of clinical improvement. For such cases it may be that a new category of accepted terms could come into use. How about undifferentiated somatic pain ("U.S.P.") or acute undifferentiated abdominal pain ("A.U.A.P.")? "Lumbago" takes a lot of beating! Such phrases, having no insidious implication of finality, leave the mind open to revise and review, which is surely what serves the patient best. Diagnostic labels should reflect the harassed uncertainty of the clinician, not the euphoric naivety of the morbid histologist.

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London, W.C.1. NICOLAS MALLESON.

SIR,—Many of the truths and criticisms expressed in the thoughtful article by Dr. Todd (Dec. 27) must of course be admitted; but is the fact that attempts at precision in diagnosis can be overdone sufficient reason for relaxing effort towards that end? His arguments are so forceful as almost to persuade one of the necessity for a return to Hippocratic principles in diagnosis, with their emphasis on description of the patient and his ills.

In reply to Dr. Todd's question "Do not such homely phrases as 'depressed and worried about himself' and 'stupid and self-centred' often give a better understanding of the symptoms?" one feels impelled to answer "No." These are mere descriptive terms the pronouncement of which would not warrant a long, arduous, and expensive professional training. The description of a patient as "stupid" hardly argues understanding in the physician. Secondly, the effort of assessing the significance of a symptom such as

depression may be well worth while from the patient's standpoint. Is he dismayed in a reactive or psychoneurotic way, or is his depression of a kind that might be expected to respond quickly to appropriate psychiatric treatment? In this connection "labels" such as psychosis, endogenous depression, and involutional melancholia still retain a certain meaning. Even more urgently: is the patient so "depressed and worried about himself" that he may feel prompted to take his life?

And is not Dr. Todd a little hard on Service medicine? After all, what could be vaguer than "unfit to fulfil Army physical requirements," a designation under which many are discharged. Moreover, his suggested phrase "short fever of undetermined origin" bears a striking resemblance to the "P.U.O." so familiar thirty-five or more years ago.

Definitions, labels, the conception of disease as distinct from disparate disease types—these and kindred matters were dealt with in a Skinner lecture by Sir Henry Cohen [1] with rare and characteristic clarity:

"The first stage in the diagnosis of disease is the recognition of simple quantitative deviations from the normal."

"A complete diagnosis must tell us where disease is, what functional disturbances are present and how these have arisen, and only in so far as diagnosis answers all these questions is it complete."

"There are no diseases; only disease."

"Yet a further function fulfilled by diagnosis, and herein lies the importance of accurate labelling, is that it shall serve as a means of *conceptual shorthand* by which experience can be pooled."

Finally Dr. Todd urges that doctors should view their diagnostic problems with humility, and realise how often they are in the dark. If anything *can* teach that lesson, it is the practice of medicine.

Liverpool. S. BARTON HALL.

SIR,—Rarely is an opportunity missed of echoing Trousseau's "il n'y a pas de maladies; il n'y a que des malades." Dr. Henderson (Jan. 3) is among many who deride the notion of the "reality" or the "existence" of disease entities: "disease names do not represent real *things*" he writes.

It is not altogether clear what they mean by "entity," "thing," "real," or "exist." They seem either to assert that diseases are not physical objects, which is a true but not very important observation; or to imply that "entity," "reality," or "existence" can be predicated only of physical objects, which is false. Any process, including those we call diseases, that can be seen to be a unity, having a characteristic evolving pattern, can be called a "real entity."

There are both patients and diseases. Both exist. Precision in diagnosis demands a knowledge of the natural history of diseases; and to think that, like the unicorn, they have no existence is singularly unhelpful.

London, W.1. KENNETH STONE.

TREATMENT OF BULBAR PARALYSIS

SIR,—With reference to Professor Lassen's interesting article (Jan. 3) concerning methods of overcoming the problems created by bulbar paralysis in poliomyelitis, I wish to draw attention to the use of a rectal drip, which I have found very helpful in this condition. These patients are not well able to tolerate tubes in the mouth, throat, œsophagus, or stomach. Such intubation causes increased salivation and occasionally vomiting, apart from the discomfort; and it increases the risk of aspiration pneumonia. On the other hand, fluid is well retained in the rectum, retention being aided by the weakness of the bowel and abdominal wall and the postural-drainage position.

Waddon Hospital, Croydon. J. J. LINEHAN.

1. Cohen, H. The Nature, Method and Purpose of Diagnosis. London, 1943.

THE ANKLE BLOW-OUT SYNDROME

SIR,—May I congratulate Mr. F. B. Cockett and Mr. Elgan Jones on their paper in your issue of Jan. 3. I consider that this work is as significant in connection with ulceration about the ankle as was that of Brodie in 1846 and Trendelenburg in 1891 in connection with the treatment of varicose veins. They have added precision to what we knew only generally.

These incompetent "blow-out" ankle veins can be felt on firm thumb pressure behind the posterior border of the tibia 3–6 in. above the tip of the internal malleolus, and more certainly when the patient is lying down and the leg is held up vertically. The orifices of emergence feel like buttonholes in the deep fascia.

Dr. Ferdinand Martorell, of Barcelona, has already described these important vessels in his book on *Varices*, and also the method of block excision of the ulcer and pigmented skin with the superficial and deep fascia and ligation of the faulty communicating veins in the base. He immediately sutures a Padgett skin graft to the defect, and he reports good results, although he admitted to me in September, 1952, that they sometimes break down. In my practice of ligation only, the wound edges have often necrosed after ligation of these inefficient communicating veins, forming yet another ulcer which takes some time to heal: this adds support to the block excision and skin graft. I regard this procedure of ligature of a communicating vein above the ankle as a major one and think that it should be undertaken only by those trained in this work.

London, W.1. HAROLD DODD.

WATERHOUSE-FRIDERICHSEN SYNDROME TREATED WITH CORTISONE

SIR,—With reference to the article by Dr. Breen and his colleagues [1] I think that a case treated by me last October should be put on record.

A man, 47 years of age, awoke one morning with general malaise, severe headache, and severe aching pains in all four limbs. I saw him at 9 A.M. and found a temperature of 103°F with moderate tachycardia and no other signs. Influenza was provisionally diagnosed, and he was given sulphadiazine 1 g. four-hourly together with routine symptomatic treatment. That evening his temperature was 101°F, but his headache and limb pains continued and he had a bad night.

The next morning his symptoms were unchanged, but he had developed a widespread purpuric rash. There was no neck rigidity; Kernig's sign was negative. His temperature was 97°F and his blood-pressure 80/55 mm. Hg; normally his B.P. ranged from 120/80 to 150/95. Arrangements were made for his admission to hospital as a case of Waterhouse-Friderichsen syndrome. By 2 P.M. he was given aureomycin as well, and he was given 100 mg. of cortisone parenterally.

At 5 P.M. he was seen by Dr. J. Markell in consultation. There were still no clinical signs of meningitis, although a lumbar puncture revealed a turbid cerebrospinal fluid at a pressure of 160 cm. of water. The cell-count was 1170 per c.mm., nearly all polymorphs; *Neisseria meningitidis* was present, but culture was sterile. At lumbar puncture the opportunity was taken to inject 20,000 units of penicillin in saline intrathecally.

At 7 P.M. the patient became confused and attempted to get out of bed. Shortly afterwards he had a fit and entered status epilepticus. He never regained consciousness and died in coma at 9 P.M.

Although the prognosis for a man of 47 with Waterhouse-Friderichsen syndrome is always grave, we were shocked at the sudden deterioration that occurred at 7 P.M. We came to the conclusion that this rapid deterioration might have been due to the cortisone, especially in view of its known inhibitory effect on fibrosis and healing.

After reading the account by Dr. Breen and his colleagues, and noting the convulsive episodes in both

1. Breen, G. E., Emond, R. T. D., Walley, R. V. *Lancet*, 1952, i, 1140.

their cases after cortisone and the subcortical hæmorrhages in the fatal case, I am of the opinion that cortisone was responsible for the convulsive episodes in all these cases. I think that cortisone is contra-indicated in acute infection, where the mobilisation of the defensive and reparative mechanisms of the body are all-important. In future I certainly shall not use cortisone in meningitis until its rôle is more clearly established.

Sydney, Australia. BRIAN HAYNES.

LIGATION OF THE POPLITEAL VEIN FOR THE GRAVITATIONAL SYNDROME

SIR,—Mr. Goligher, in his interesting remarks last week about ligation of deep veins for valvular incompetence, makes the assumption that ligation of either the superficial femoral or popliteal veins will have the same consequences as far as the venous circulation in the lower leg is concerned.

It is possible, however, that a resistance placed at the outlet of the calf-muscle pump (which is presumably what ligation of the popliteal vein amounts to) would be more efficient in diminishing reflux during calf diastole than one placed at the groin with a considerable venous reservoir intervening. Further, the resistance offered by the two procedures is probably not the same; the open profunda femoris vein provides a by-pass of much larger calibre than any at the knee after popliteal vein ligation.

In support of this hypothesis is the finding [1] that popliteal vein ligation in patients with incompetent valves in the deep veins of the leg can reduce the high venous pressure in the foot, measured during exercise, which exists in such patients. Comparable hydrostatic improvement has not, to my knowledge, been shown for ligation of the superficial femoral vein.

I do not wish to advocate popliteal vein ligation, but believe it cannot justifiably be condemned because ligation of the superficial femoral vein does not succeed.

University College Hospital Medical School, London, W.C.1. C. J. LONGLAND.

THE SURGICAL TREATMENT OF ULCERATIVE COLITIS

SIR,—I do not wish in any way to detract from the merits of the excellent article on this subject by Mr. Counsell and Mr. Goligher (Nov. 29); but I feel that, though ileostomy is no doubt often necessary in ulcerative colitis where medical treatment fails, there is still a place for the older operation of appendicostomy, at least as a trial before resorting to the more serious and mutilating one of permanent ileostomy, coupled with colectomy with its mortality of 16%.

Appendicostomy was at one time regarded as a good operation; it clearly cannot succeed if there are ulcers above the colon, but I feel that this is possibly the exception rather than the rule. The operation fell into disrepute because of Arthur Hurst's dogmatic statement that lavage of the colon from below is just as effective as lavage with 4 pints of saline through an appendicostomy opening, but I doubt if this is necessarily always so.

Ulcerative colitis is rare in children, in whom it was first described by Helmholtz at the Mayo Clinic as late as 1923. As a pædiatrician, I can only recollect having seen two examples in the last ten years or so, both, of course, in older children.

The first of these was not doing entirely satisfactorily after a year of medical treatment; and, being aware of the danger of carcinomatosis supervening even in an older child or young adult (probably about 10% according to American figures), I approached Mr. Henry Stokes with the request that he should do an ileostomy. Even under considerable pressure from me, he held out in his view that an appendicostomy should be tried first. The child washed her colon out daily for a year; and when, after a further trial period of three months during which lavage was suspended, the stools remained normal the appendicostomy was closed. The radiographic appearances returned from the typical "ironed-out" and "string" pattern to the normal one with its characteristic haustrations; and the patient has remained perfectly well for five years. When I saw her recently, she told me that she is now a typist.

The second case, a boy, has done very well so far with an appendicostomy, again after a period of medical treatment had failed. He now has relatively normal stools free from blood, and he has put on 10 lb. in weight since his operation in June.

What applies to a child may not necessarily apply to an adult; but at least one cannot help feeling that this girl's future is likely to be a happier one, from a marital and every other point of view, with a normal body such as she has than with a permanent ileostomy.

National Children's Hospital, Dublin. R. E. STEEN.

1. Walker, A. J., Longland, C. J. *Clin. Sci.* 1950, **9**, 101.

THERAPEUTIC APPLICATION OF PLASMA CHOLINESTERASE

SIR,—Dr. Barnard's letter (Dec. 13) is of great interest, and now that succinylcholine chloride is widely used in anæsthesia the confirmation that plasma "pseudo"-cholinesterase concentrate is an effective and innocuous antagonist of the drug is encouraging. Dr. Barnard says, however, that "some of the observed therapeutic effects . . . remain inexplicable." The same can sometimes be said of the anticholinesterase, neostigmine.

The danger of giving such a cholinesterase inhibitor in the presence of succinylcholine (cholinergic) paralysis is supported by substantial experimental and theoretical evidence. Several writers [1–5] have mentioned the prolongation produced by neostigmine, a powerful inhibitor of the cholinesterase which is responsible for the hydrolysis of succinylcholine. Three cases of paralysis apparently prolonged in this way have been published,[6–8] but Grant [9] described a case in which paralysis persisting until the third day after 80 mg. of succinylcholine was reversed by 1·0 mg. of neostigmine. Ruddell [10] had success with 6·0 mg. of neostigmine in a patient who had had succinylcholine and decamethonium. Other cases have been reported after decamethonium.

The following report tells of another instance in which neostigmine was used successfully.

A woman of 62, weighing 120 lb., had malæna due, it was thought, to a peptic ulcer. 2 pints of packed red cells raised her hæmoglobin from 39 to 62%. Her general condition was fair, and the blood-pressure was 120/90 mm. Hg. She was operated on after a second 2 pints of packed red cells.

Premedication.—Pethidine 100 mg. and atropine gr. $^1/_{100}$.

Induction.—Thiopentone 0·25 g. and succinylcholine chloride 25 mg., followed by intubation.

Maintenance and Progress.—Nitrous oxide and oxygen (65/35%) at 6 litres per min. on semi-open circuit with absorption. Intermittent pethidine (total 50 mg.). Full spontaneous respirations returned before the peritoneum was opened. Thiopentone (0·25 g.) and *d*-tubocurarine (10 mg.) sufficiently relaxed the poorly developed abdominal wall, though adequate respirations remained.

Laparotomy, lasting 35 min., revealed an inoperable carcinoma. For closure, 25 mg. of succinylcholine produced immediate apnœa and relaxation, but unforeseen surgical difficulties led to some delay and closure took 55 min. Relaxation was continued by small doses of succinylcholine, given when weak respiratory efforts reappeared (total 225 mg.).

When controlled respiration was stopped feeble inadequate diaphragmatic respirations returned, but there was no inter-

1. Ottolenghi, S. R. Communication to 26th International Congress of Anæsthesiology, London, September, 1951. See *Brit. med. J.* 1951, ii, 668.
2. Thesleff, S. *Ibid.*
3. Scurr, C. F. *Ibid*, p. 831.
4. Bourne, J. G., Collier, H. O. J., Somers, G. F. *Lancet*, 1952, i, 1225.
5. Evans, F. T., Gray, P. W. S., Lehmann, H., Silk, E. *Ibid*, p. 1229.
6. Harper, J. K. *Brit. med. J.* 1952, i, 866.
7. Gray, T. C. *Lancet*, 1952, ii, 40.
8. Mackay, M. L. *Ibid*, p. 145.
9. Grant, G. *Brit. med. J.* 1952, i, 1352.
10. Ruddell, J. S. *Lancet*, 1952, ii, 341.

costal movement and no further improvement during the next 110 min. A pint of whole blood was given. The patient's condition remained satisfactory on 100% oxygen with intermittent gently assisted respirations. 20 ml. of nikethamide had no effect.

At this stage feeble finger, toe, and facial twitches were apparent. The endotracheal tube was removed, and the patient made ineffective attempts to clear her throat. She was obviously recovering consciousness, though still paralysed.

Though it normally potentiates the effect, there seem to be some theoretical grounds for giving neostigmine in these cases,[11] and here it was given slowly in dilute solution. After a total of 2·0 mg. over 3–4 min. there was a dramatic response. The patient was able to move freely and to talk coherently, and she was safely returned to the ward 5 min. later, fully conscious. Remarkably, next day she had no recollection of the experience.

It is most unlikely that the early small dose of tubocurarine, after which adequate intercostal respirations continued for 40 min., had any effect on the paralysis that followed 90 min. later and persisted for a further 2 hours. The thiopentone and pethidine were also given early and, had either been the cause, 20 ml. of nikethamide should have produced some response, for it has been shown to be a most efficient antidote to overdoses of pethidine.[12]

Blood taken the day after the operation provided further evidence in favour of a succinylcholine paralysis. The Hb was 64% and the serum-cholinesterase level was 50 units (normal for this method 130–310 units). A fortnight later it was 45 units, and the Hb was 61%.

In this case there was an extremely low plasma-cholinesterase level. This is the main factor in all true prolongation of paralysis.[13 14] It is not certain, however, whether all the reported cases have had true succinylcholine paralysis, for with the exception of Dr. Bourne's cases,[4] information about the serum—not the whole blood—enzyme levels is lacking.

Dr. Lehmann [14] says that Callaway et al.[15] have shown that "there is little chance of encountering such a case" (of low serum pseudo-cholinesterase) "in an average sample of the population." As the work quoted is based on the levels found in Servicemen "fit for full combat duty anywhere" and healthy civilian blood-donors, I cannot agree that this is necessarily true of the average "anæsthetic population." Preliminary examination of the figures from the preoperative cases I have collected tends to confirm this opinion. Preoperative treatment may indeed mask the effects of chronic malnutrition and anæmia, both of which lower the cholinesterase activity of the blood. Regeneration is very slow [16] and cannot easily be corrected in short periods. Transfusion of packed red cells does not raise a low plasma-enzyme level, and stored blood has been shown to lose its cholinesterase activity rapidly.[17]

Naturally, conditions which cause a low plasma-enzyme level should be avoided. Anæmia, liver disease, and malnutrition have been mentioned, and I would add patients who have been recently transfused to raise their hæmoglobin to levels otherwise acceptable to the surgeon. Dr. Barnard also mentions the effect of X radiation.

I consider succinylcholine to be a relaxant unparalleled for effect, general flexibility, and lack of side-effects; and I have used it successfully in nearly 800 patients, only 2 of whom have given me any anxiety. The second patient, though not entirely similar to the first one described here, also took a long time to recover, and had been transfused over a short period from a grossly anæmic state to a superficially safe level. In both these cases the choice of the drug was probably unwise and would have been better avoided.

From Dr. Barnard's observations it now seems possible that anæmic patients may be protected from unexpected prolongation of paralysis by the infusion of cholinesterase concentrate.

Portsmouth. R. J. HAMER HODGES.

11. Discussion at meeting of section of anæsthetics, Royal Society of Medicine, Nov. 7, 1952.
12. Romer, C. *Brit. med. J.* 1952, ii, 1135.
13. Evans, F. T., Gray, P. W. S., Lehmann, H., Silk, E. *Lancet*, 1952, ii, 682.
14. Lehmann, H. *Ibid*, p. 199.
15. Callaway, S., Davies, D. R., Rutland, J. P. *Brit. med. J.* 1951, ii, 812.
16. Grob, D., Lilienthal, J. L. jun., Harvey, A. M., Jones, B. F. *Bull. Johns Hopk. Hosp.* 1947, **81**, 217.
17. Scudamore, H. H., Vorhaus, L. J., Kark, R. M. *Blood*, 1951, **6**, 1273.

ANÆSTHESIA IN WHOOPING-COUGH

SIR,—On May 20, 1951, a four-year-old child, who had been suffering from whooping-cough for ten days, fell down some steps. A large wound of the chin was sutured and the bleeding arrested under general anæsthesia with ethyl chloride. When the child recovered from the anæsthetic the parents noticed that the whooping had completely stopped, though she continued to cough a little for a few days.

In November, 1952, I gave ethyl chloride to a five-year-old girl with whooping-cough, and the whooping again stopped after the anæsthetic.

Royal Hospital, Bagdad. KHALID NAJI.

THE ACTION OF SODIUM P.A.S. ON RODENT ULCERS

SIR,—In an account [1] of the treatment of rheumatoid arthritis and osteo-arthritis with sodium *p*-amino-salicylate (P.A.S.), I described a patient with osteo-arthritis in whom a rodent ulcer, which had been present for some months on the ala of the nose, disappeared during the administration of sodium P.A.S. This patient (case 1 in the accompanying table) had previously had an operation for the removal of a rodent ulcer of the lobe of an ear. Since then 4 more patients with rodent ulcers have been treated with sodium P.A.S. by mouth. In one case the drug produced symptoms of incompatibility, and local infiltrations of sodium P.A.S. solution were substituted (case 5).

This report is based on 5 cases in which the diagnosis was made purely on clinical grounds, without biopsy and pathological confirmation of the diagnosis. The reason for this was that although the patients were told about the nature of their condition, it was felt that even a minor surgical procedure, such as a biopsy, might discourage the patient from continuing treatment and delay possible confirmation of the results obtained in the first case.

The 5 patients (3 women and 2 men) were all over the age of 60. Details of treatment and results are shown in the accompanying table.

I understand that investigations on a much larger scale, including a study of the pathological changes, are to be conducted shortly at the Royal Adelaide Hospital.

Of course a rodent ulcer can be cured more quickly with radium; but these results suggest that there may be

1. Brous, M. *Med. J. Aust.* 1952, i, 774.

RESULTS OF TREATMENT OF RODENT ULCER WITH SODIUM P.A.S.

Case no.	Age	Duration of lesion (months)	Diameter of lesion (in.)	Site of lesion	Duration of treatment	Dose of P.A.S. by mouth	Result
1	62	6	0·2	Nose	3 months	6 g. daily	Cured
2	71	8	0·5	Nose	2 months	6 g. daily	Cured
3	60	5	0·4	Cheek	4 months	6 g. daily	Cured
4	68	5	0·3	Nose	3 weeks	6 g. daily	Lesion reduced to half its original size in 3 weeks; patient then given radium therapy only
5	67	4	1·0	Right temporal region	3 months	6 g. daily for 3 weeks; then local infiltration of P.A.S.	Cured

important information to be gained from further investigations. For instance, it would be interesting to know the in-vitro reaction of cancer cells to sodium P.A.S.; and it is conceivable that a biological method of diagnosis might be evolved in this way.

Adelaide,
South Australia. MICHEL BROUS.

ALMONERS

SIR,—I fully endorse the last paragraph of your annotation on Almoners (Dec. 27) which says: "It would surely be better, as a first step, to consider the factors which are hindering recruitment of almoners of our present high standard." Some of these factors are mentioned earlier, and to these should be added the fact, emphasised in the Cope Committee's report on almoners, that there are too few students in social science in the universities to meet the requirements of all professions for which this training is the basis, and until this shortage can be overcome there does not seem any likelihood of providing adequate numbers of almoners.

It is, therefore, of paramount importance that almoners should be employed only on the medical social work for which their course of training especially equips them. Any dissipation of their energies to cover administrative and clerical duties, such as registration, appointments, waiting-lists, and transport arrangements, is wasteful and can only lead to a proportionate lessening of their value as almoners. Some hospitals have taken a long time to grasp the value and proper uses of almoners. Others, regrettably, have not grasped these points yet. The limited number of almoners could be distributed over a much larger number of hospitals if they were all allowed to concentrate on medical social work. This in itself is no narrow, restricted field but, according to a recent definition, consists in studying the patient's social background and his reactions to illness with a view to assisting in the solution of the many personal and practical problems which are associated with illness.

The members of the Institute of Almoners have recently been reconsidering this problem in order to see how the available medical social skill can be employed where it will be best used for furthering the patient's interests. It is understood that they hope shortly to submit a memorandum on this subject to the Minister of Health. Meanwhile it cannot be too strongly emphasised that an obvious and immediate way of alleviating the present shortage problem is to ensure that almoners are engaged only on almoner's work.

North West Metropolitan Regional Hospital Board,
11A, Portland Place, London, W.1. H. M. C. MACAULAY
Senior Administrative Medical Officer.

FRACTURES OF THE NECK OF THE FEMUR

SIR,—With reference to my recent article on a technique for inserting the Smith-Petersen nail for fractures of the neck of the femur without moving the patient from his bed,[1] it has been brought to my notice that Prof. Carl Semb, of Oslo, published a paper in 1938[2] describing his own technique, which was also designed to relieve the patient of disturbance and shock by carrying out all the treatment, including operation, in the patient's own bed.

Although his technique is quite different from my own, the principle is the same. In a personal communication he tells me that his method has now been used in over a thousand cases in his department, with excellent results. What is more important is that he states that this method, because it is less liable to cause shock, enables him to operate in 90% of cases.

As I emphasised in my paper, the avoidance of shock by using a simple technique and avoiding all disturbance of the patient makes the operation a life-saving measure as well as a means of treating the fracture. I would like to draw the attention of all those who have to deal with these cases to Professor Semb's paper.

Guy's Hospital, London, S.E.1. T. T. STAMM.

1. Stamm, T. T. *Lancet*, 1952, ii, 59.
2. Semb, C. *Surgery*, 1938, 4, 321.

AGRANULOCYTOSIS DURING ISONIAZID THERAPY

SIR,—Dr. Ferguson (Dec. 13) describes a patient with an agranulocytosis whose blood-count promptly returned to normal after cessation of treatment with isoniazid. In this connection the following case is of interest.

A patient, aged 20 years, suffering from diabetes mellitus and pulmonary tuberculosis, received: (1) streptomycin 1 g. daily from Nov. 3 to 20; (2) *p*-aminosalicylic acid (P.A.S.) 12 g. daily from Nov. 3 to Dec. 12; (3) isoniazid 200 mg. daily (3 mg. per kg. body-weight) from Nov. 21 to Dec. 12.

On Dec. 10 he developed fever, followed next day by slight jaundice. The liver was slightly enlarged, but the spleen was not felt. The urine contained bile pigments.

A blood-count on Dec. 10 showed an agranulocytosis. Next day, after all treatment was stopped, sternal puncture showed a maturation arrest at promyelocyte level with a considerable reduction of the number of neutrophil semi-mature myelocytes and complete absence of neutrophil myelocytes and polymorphs.

The details of the sternal-marrow count were:

	Percentage
Neutrophil (segmented)	0
,, (myelocyte)	0
,, (semi-mature myelocyte)	0·5
,, (semi-mature myelocyte in mitosis)	0·25
,, (promyelocyte)	3·0
,, (promyelocyte in mitosis)	0·25
Eosinophil (segmented)	0·75
,, (promyelocyte)	0·25
Myeloblast	1·75
Lymphocyte	8·5
Monocyte	3·75
Promonocyte (? promyelocyte)	2·0
Monoblast (? myeloblast)	2·75
,, (in mitosis)	0·25
Normoblast (orthochromatic or late polychromatic)	36·25
,, (polychromatic)	18·0
,, (polychromatic in mitosis)	0·75
,, (basophilic)	5·5
,, (basophilic in mitosis)	0·25
Proerythroblast	0·5
Hæmocytoblast	0·25
Megakaryocyte	0·5
Reticulum cell (macrophage)	5·5
,, plasma cell	1·75
,, lymphoid cell	6·75

There was an increased proportion of monocytes in the peripheral blood throughout the whole agranulocytic episode.

The patient was given penicillin, pyridoxine, aureomycin, and methionine. The temperature (104°F on Dec. 12) fell by lysis, and six days after stopping P.A.S. and isoniazid the granulocytes started to reappear and the fever finally disappeared.

The changes in the differential white blood-cell count are shown in the accompanying table. Hæmoglobin red cells, reticulocytes, and platelets were normal throughout.

DIFFERENTIAL WHITE BLOOD-CELL COUNTS

Date	White cells per c.mm.	Neutrophils (%)				Eosinophils (%)	Basophils (%)	Monocytes (%)	Lymphocytes (%)
		Myelocytes	Metamyelocytes	Stab forms	Segmented forms				
Dec. 10	4200	—	—	2·5	2·5	7·0	—	18·5	69·5
,, 12	—	—	—	—	—	—	—	32·0	68·0
,, 13	5250	—	—	—	—	—	—	18·0	82·0
,, 15	1700	—	—	—	—	—	—	41·6	58·4
,, 16	2300	—	—	—	—	—	—	35·0	65·0
,, 17	2100	—	—	—	—	—	—	46·4	53·6
,, 18	2900	0·8	1·6	6·4	1·6	—	—	49·6	40·0
,, 19	2300	5·6	6·4	10·4	7·2	0·8	—	16·8	52·8
,, 20	4100	3·2	4·0	12·8	14·4	—	—	24·0	41·6
,, 22	5350	1·6	0·8	15·2	21·6	—	—	19·2	41·6
,, 24	7400	—	1·6	16·8	41·6	—	0·8	8·8	30·4
,, 29	9200	—	—	6·5	39·0	—	0·5	15·0	39·0
,, 30	7700	—	—	6·5	49·0	—	1·0	12·5	31·0

Rubin et al.[1] found liver damage with jaundice and (in one animal) a decrease of the erythroid cells in the bone-marrow after administration of large doses (25 mg. per kg. body-weight) of isoniazid to dogs. Benson et al.,[2] in their long-term experiments with large doses of isoniazid fed to rats, observed a depression of the average leucocyte-count and an increased cellularity of the bone-marrow, with a relative reduction in the number of adult neutrophils.

It seems that in man there are big individual variations in the sensitivity to isoniazid, even when it is given in the usual dosage for a short period. It is debatable what part the streptomycin and P.A.S. played in this agranulocytosis. The clinical signs did not appear until three weeks after streptomycin was stopped; it was also at this time that the rapid fall of the granulocytes was discovered. These two facts, together with the prompt recovery, suggest that streptomycin was not to blame. On the other hand, the concomitant jaundice and the restoration of the granulocytes soon after the withdrawal of isoniazid support the view that isoniazid was the cause. At all events, the animal experiments I have mentioned and Dr. Ferguson's observation indicate that there is a strong case for careful hæmatological control during isoniazid treatment.

Department of Pathology, City General Hospital, Sheffield. S. VARADI.

Winter Street Hospital, Sheffield. T. D. KELLEHER.

GONORRHŒA IN ANCIENT ROME

SIR,—It is true that clear references to venereal disease are scarce in classical literature. Considering the undeveloped state of nosology, the taboo surrounding the subject, and the wholesale destruction of most of the writings of that period, this is perhaps not surprising. Even our own acquaintance with venereal disease might appear rather fragmentary to our successors if nothing were left of our literature except a few dozen non-medical books, chosen at random, and half a dozen texts on general medicine.

Even so, Dr. Vertue (Dec. 20) probably wrongs Juvenal in stating that he never mentions gonorrhœa. "Podice levi cæduntur *humidæ*, medico ridente, *mariscæ*" may be taken to refer to gonorrhœal condylomata which is the form of the disease which seems to have received most attention from the ancients. This is not surprising in view of the climatic and hygienic conditions in classical Rome.

Dr. Vertue certainly misrepresents Celsus, who devoted most of the 18th chapter of his 6th book to infectious afflictions of the genital organs. The apologetic preamble to this chapter provides at the same time a clue to the reticence of classical writers on this subject. Lanceraux in his treatise on syphilis quotes Martial, and states that he was embarrassed in making his choice because the epigrams of this writer are so fertile in references to the contagiosity of venereal disease. He also mentions in addition passages from Hippocrates, Natalis Comes, Aretaeus, Galen, Aetius, Oribasius, Marcellus Empiricus, and Dion Chrysostome.

The Roman argument in favour of prostitution—namely, that it preserved the chastity of the home—has been used by protagonists of prostitution through the centuries and up to our own times, and cannot therefore be adduced as evidence for the absence of gonorrhœa. The natural history of this disease tends to be forgotten in these days of universal and effective treatment, but there can be no doubt that untreated gonorrhœa will proceed to resolution and cure in the majority of cases. Casanova, for example, cured himself again and again by a simple regimen comprising little more than rest, diet, and temperance.

In my limited reading of the classics, I have not come across a reference to the acute urethral stage of gonorrhœa as convincing as that in *Leviticus* XV: but this itself should serve to allay some of Dr. Vertue's doubts; for, if the disease was rampant on the eastern side of the Mediterranean, it is entirely improbable that the master race should have been spared.

Edinburgh. ERICH GEIRINGER.

SPLENOMEGALY IN SCARLET FEVER

SIR,—I was interested in Dr. O'Reilly's letter (Dec. 20) for I have also noticed splenomegaly quite frequently in scarlet fever. On referring to my notes on the last 100 cases of this condition that I have seen, I found that the spleen was palpable in 11 patients. Such cases did not seem to be any more severe than those without splenomegaly. Box[1] states that the spleen is rarely palpable in scarlet fever.

It is, of course, well known that a moderate enlargement of the spleen may be found post mortem in cases of scarlet fever, as in many other acute infective conditions.

Tyntyla Isolation Hospital, Pentre, Rhondda. M. S. PATHY.

Sir FRANCIS CHAMPNEYS AND THE MIDWIVES ACT

SIR,—In the reports of the festivities to celebrate the 50th anniversary of the passing of the first Midwives Act and the birth of the Central Midwives Board, it is surprising to see so little reference to Sir Francis Champneys, who did so much to promote the Bill and was the first chairman of the C.M.B. from 1902 until his death in 1930. However great his part in promoting the Bill—and I understood from some who worked with him that his was the main driving force behind it—it was his administrative ability, patience, firmness, and tact, as chairman of the C.M.B., which made possible the implementation of the Act and the development of the great profession of midwives as we know it today.

Prior to the passing of this Act, midwives as a whole were drawn from a poor social class, often quite illiterate, and thus training was of the scantiest, while, in many instances, the handy woman, without any training, was in charge.

The Act of 1902 forbade any woman to attend a confinement unless she was on the register of the C.M.B. and laid down a period of resident training in a maternity hospital and the passing of an examination for those who aspired to this. To tide over the period until a new generation of better trained women was available, the old midwives had to be employed and the first register consisted of those who had been in practice as midwives for a year before the passing of the Act. Some latitude had to be given, and I think my memory is not at fault in placing the date as Jan. 1, 1905, after which date no woman could be placed on the register unless she had completed the prescribed training and passed the C.M.B. examination.

In Manchester, and no doubt in other centres, the first "inspector of midwives" commenced her duties on this date, and it happened that I commenced my $3^1/_2$ years as resident obstetric officer to St. Mary's Hospital, Manchester, on the same day. In this post I had the usual responsibilities of a senior resident for the hundred obstetrical and gynæcological beds in the hospital and, in addition, complete responsibility for a large home district in which 3000–4000 confinements per annum were attended by hospital district midwives, every one of whom was now on the register by virtue of having been in practice before the passing of the Act. Many of these women had acquired much clinical knowledge and the great majority were devoted to their patients and their work; but, with a few notable exceptions, they were drawn from a poor social class with little education. Some were almost illiterate and incapable of absorbing anything from the course of lectures they had attended while few of the others understood the meaning of "sepsis" and "antisepsis" and still preferred a little freshly rendered lard as a lubricant.

These I think were a fair sample of the midwives of the country, and the task of the C.M.B. was to keep the midwifery service of the country functioning while by slow degrees they replaced the worst offenders by newly trained midwives and educated the more intelligent of the old ones to a higher standard of practice.

1. Rubin, B., Hassert, G. L. jun., Thomas, B. G. H., Burke, J. C. *Amer. Rev. Tuberc.* 1952, **65**, 392.
2. Benson, W. M., Stefko, P. L., Roe, M. D. *Ibid*, p. 376.

1. Box, C. R. *In* A Textbook of the Practice of Medicine. London, 1950; p. 81.

To have removed from the register all who failed to conform to modern standards before new ones had been trained would have created chaos: to have been too lenient and weak would have failed to bring home to the profession the necessity of improvement if they were to retain their registration. Above all it was necessary to improve the tests of general education of the candidates, to increase the training and, to stiffen the standards of the examination. Only in this way could a profession be created which would attract candidates from a higher social scale with greater intelligence and better education. That this was done gradually without chaos and with the minimum of friction was due in no small measure to the firmness, patience, and breadth of vision of the first chairman of the board, Sir Francis Champneys.

Needless to say the new supervisor of midwives and myself soon fell foul of each other when she reported some of my midwives to the board; but soon I realised that the power given to this board was being exercised with firmness tempered with common sense and understanding and that the supervisor was encouraged to train rather than to punish. When I became conscious of this influence at the highest level I, and probably all others in similar posts, freely coöperated with the supervisor to the great advantage of the midwives and of the service. Of all my staff only one had her name removed from the register, and she thoroughly deserved it, though many were reported to the board, admonished by the chairman, and dismissed with a caution, always with good effect.

During the chairmanship of Sir Francis Champneys this despised profession of poorly educated, poorly trained women, grew into the profession as we know it today. Gradually the period of training and the standard of general education and examination were raised, and with each step a better class of woman was attracted to the service, until now it is one of which the members are justly proud and with its own college.

This indeed is a fitting memorial to the wise guidance of Sir Francis Champneys through the 28 years of his chairmanship. As there can be few, if any, alive today who saw at such close quarters the work of the C.M.B. and its chairman, I feel that I must put on record what this service owes to him.

Manchester. WM. FLETCHER SHAW.

CHRONIC BRONCHITIS AND BRONCHIAL CARCINOMA

SIR,—During recent hospital experience I have been greatly impressed by the autopsy findings in a number of patients dying after long-continued chronic bronchitis and emphysema. These autopsies confirmed our clinical opinion that death had resulted from terminal bronchopneumonia, but the striking feature (which we had not recognised during life) was the co-existence of primary bronchogenic carcinoma.

Clinical impressions without figures to support them are, I know, apt to be misleading; but they can at least point the way towards valuable research. Therefore I feel that this observation, which may or may not be significant, merits an investigation into whether bronchogenic carcinoma is commoner in patients with long-standing chronic bronchitis and emphysema than in the rest of the population.

If this association should be proved, then we should have to revise the teaching that the possibility of bronchogenic carcinoma must be remembered in patients over 40 years of age with *recent* pulmonary symptoms or signs. Instead, whenever chronic bronchitics took "a turn for the worse" we should have to send them to hospital for detailed investigation.

This observation may have an important bearing on the vexed question of tobacco and lung cancer. We know already that all inveterate smokers sooner or later develop a greater or lesser degree of chronic bronchitis. Is it not possible that this chronic bronchitis, per se, renders the smoker especially prone to lung cancer? The analogy of the pneumoconiotic lung being especially prone to tuberculosis springs to mind.

Heathfield, Sussex. ADRIAN V. ADAMS.

CONGENITAL ABSENCE OF THE COMMON BILE-DUCT

SIR,—In their interesting report on this subject (Dec. 20), Dr. Durell and Mr. Halliwell point out that only 21 instances of successful operative treatment had been reported up to 1949. It is likely that the successes not reported would increase this number considerably, but nevertheless the condition is rare and operative relief much rarer.

Thus my recent experience, at the Royal Manchester Children's Hospital, of operating on 3 such cases in one week was unusual, and finding 2 of these cases suitable for treatment was even more so. After an anastomosis between Hartmann's pouch and the duodenum, using 'Nylon' sutures, both patients gained coloured stools and lost their jaundice. 1 infant died three weeks later from respiratory distress, present before operation, the cause of which was not found before or after death. The other has done well.

Since there is always a possibility of operative relief all cases with complete congenital bile-duct obstruction should be surgically explored before the liver is too severely damaged.

Manchester. HERBERT HAXTON.

TABLET-IDENTIFICATION BOX

SIR,—A tablet-identification box such as that described by Dr. Russell and Dr. Thorne (Dec. 27) can be very easily manufactured out of a large sheet of cardboard and the strips of perforated cardboard which Messrs. Menley & James send out with some of their proprietary preparations. The tablets can be retained in their individual recessed holes with 'Selotape.'

A tablet-identification box on these lines was of great use in a hospital which was constantly admitting patients in coma, whose relatives said they had swallowed some "tablets the doctor gave her," and also children who accidentally swallowed tablets left lying about the house. Accurate knowledge of the tablets swallowed made treatment much easier.

Winchester. P. G. CRONK.

HERPES GESTATIONIS AND AUREOMYCIN

SIR,—In your leading article on the Action of Antibiotics[1] you mentioned that certain effects of streptomycin and the newer antibiotics cannot be attributed to their direct action on bacteria and viruses. Thus, for example, the remissions that have been reported in leukæmia, Hodgkin's disease, disseminated lupus erythematosus, and rheumatoid arthritis cannot be direct antibiotic effects. It is also known that these drugs have some action in diseases such as scleroderma, acrodermatitis, and pityriasis rubra, and that this action cannot be explained by their antibiotic properties. In a letter in the same issue Dr. Barnard[2] discussed the same question, and put forward a hypothesis based on the "indirect" action of streptomycin and other "mycins."

We have given aureomycin to a patient with herpes gestationis and, as the result was a partial success, we think this is an example of the "indirect" action of aureomycin.

History and Clinical Findings.—A woman, aged 42, was the mother of five children. The family and personal history showed nothing of note until 1944, when she became pregnant for the sixth time. During the fifth month, irritating skin lesions developed and persisted throughout the pregnancy. She was delivered at term, but the child died immediately afterwards. The skin changes and the irritation then gradually disappeared. In October, 1951, she became pregnant again. After two months, the same skin changes appeared with severe irritation, and on March 25, 1952, she was admitted to hospital.

At this time the skin of the whole body, except the face, was covered with urticarial and papulovesicular lesions, with

1. *Lancet*, 1952, ii, 374.
2. Barnard, R. D. *Ibid*, p. 387.

red or livid plaques of varying size. The lesions were most numerous on the chest and abdomen, and the irritation was unbearable. The mucosæ were unaffected.

The blood-pressure was 130/90 mm. Hg, and X-ray examination of the chest showed a normal heart.

Laboratory Investigations.—Red cells 4,280,000 per c.mm.; Hb 74%; white cells 5800 per c.mm. (polymorphs 63%, stab forms 6%, lymphocytes 22%, monocytes 4%, eosinophils 5%); erythrocyte-sedimentation rate 108 mm. in the first hour (Westergren); blood-calcium 9·9 mg. per 100 ml.; blood-cholesterol 224·6 mg. per 100 ml. The Takata-Ara test was strongly positive. The urine was normal. Histological examination of the skin showed a non-specific inflammatory reaction in the corium with hyperkeratosis. We are indebted to Prof. Z. Kopac, of Sarajevo, for the biopsy report.

Treatment and Progress.—A diagnosis of herpes gestationis was made. The patient was treated with phenobarbitone, antazoline ('Antistin'), and serum from a healthy pregnant woman, but with no success. Her condition became desperate, for she was utterly exhausted by the intolerable irritation and lack of sleep, and it was considered justifiable to terminate the pregnancy. This was done on April 4, but the disease went relentlessly on.

Finally, on April 14, we turned to aureomycin (250 mg. every 4 hours). On the second day of treatment she slept better, and the skin lesions became paler and the irritation substantially less. On April 21 the aureomycin was stopped because she had severe diarrhœa. By that time the skin had cleared except for the legs, where erythema persisted. During treatment with aureomycin the eosinophil-count rose to 18% on April 16.

After aureomycin was stopped, she had vitamin C by mouth and calcium bromide intravenously, but the skin lesions and irritation recurred. Starting on April 28 she was given 1·5 g. of aureomycin daily for five days. On that day the eosinophil-count was 6% and the erythrocyte-sedimentation rate was 78 mm. in the first hour. Again the irritation disappeared and the skin lesions subsided. On May 5 the eosinophil-count was 4% and the sedimentation-rate 43. The improvement was maintained and the patient went home on May 9 at her own request. She was not completely cured, but she was infinitely better.

The association between aureomycin and the improvement in the condition seems clear, but it is hard to see how the drug worked. A smaller point which we were also unable to explain was the changing eosinophil-count.

General Hospital,
Titograd, Yugoslavia. TIBOR SALAMON.

MUMPS ORCHITIS WITHOUT PAROTITIS

SIR,—In his paper last week Mr. Connolly describes a case of testicular swelling in an infant and produces convincing evidence that it was due to mumps. It is his opinion that many other such cases have the same ætiology, and that mumps more often causes acute swelling of the testicle than does torsion of that organ.

My experience, though admittedly of an older age-group, convinces me that his conclusions are wrong—that is, unless he considers mumps to be the commonest cause below the age of 1 year and torsion after that age.

Of the 13 cases of torsion that I have now seen, 8 were in patients under 14 years; and among the 11 cases I described,[1] 3 of the 5 I had not seen were under 14 years. Further, to the best of my knowledge I have seen only 1 child (aged 4) with acute testicular swelling in whom the diagnosis of torsion was not confirmed. Although he was admitted with that diagnosis operation was not advised.

While appreciating that Mr. Connolly advises exploration in all cases of doubt, I would like to add a warning. It is not uncommon for the testicle to undergo spontaneous untwisting. This occurred in 6 of the 18 cases of which I have notes. In 3 operation was performed very shortly after the pain and swelling suddenly subsided. In each there was excess fluid in the tunica vaginalis, and congestion of the testicle, as Mr. Connolly describes in his second case. In 2 of these there was no obvious anatomical abnormality, such as a long mesorchium. The sudden subsidence of swelling and pain while the testicle was being manipulated was evidence of the mechanical factor.

I suggest, therefore, that unless there is strong evidence of contact with a case of mumps, all such cases should be explored. If the testicle is not gangrenous steps should be taken to fix it to the scrotal tissues. If the cause of the swelling were torsion its recurrence would thereby be prevented. If it were due to mumps no harm would have been done.

Surgical Unit,
London Hospital, E.1. A. J. WALTON.

1. Walton, A. J. *Lancet*, 1952, ii, 211.

SUPPORTIVE THERAPY

SIR,—Professor Boyd and his colleagues in their article last week very rightly draw attention to the importance of a rational approach to the development of polymeric substances for use in plasma substitutes. No product should be finally accepted until all the recognised important factors have been fully investigated.

When more than one such substance is being developed it can always happen that unpublished data are available on one of the polymers which would assist in the assessment of the others, although the ideal molecular form need not necessarily be the same for every polymer. The results of experimental work on a particular type of polyvinylpyrrolidone, carried out in these laboratories, are being prepared for publication, and some of the conclusions are important in the light of Professor Boyd's paper.

I should emphasise that they refer only to the polyvinylpyrrolidone used in 'Plasmosan.' In this material the maximum molecular weight is about 100,000 and the peak value about 35,000. Samples of polyvinylpyrrolidone of other molecular-weight ranges need not have the same physiological properties as those described here. Indeed, the differences between the results obtained by us and those on polyvinylpyrrolidone cited by Professor Boyd might easily be accounted for in this way.

The excretion of polyvinylpyrrolidone is such that about 40% remains in the body after 24 hours. At this time plasma-levels are just less than half of the value immediately after transfusion. Detailed interpretation of these results is difficult since the concomitant variation in blood-volume is not known, but they indicate that most of the unexcreted polyvinylpyrrolidone is in the plasma, so that the colloidal osmotic pressure produced can hardly be transient.

No histological evidence for the permanent storage of polyvinylpyrrolidone has been found,[1] and this is supported by the following results.

Determination of the molecular-weight distribution of polyvinylpyrrolidone recovered from the urine of patients receiving intravenous plasmosan has shown that molecules of all the molecular weights present in the infusion are capable of being excreted, and that if a threshold molecular weight exists above which polyvinylpyrrolidone molecules would not be excreted this is considerably in excess of 100,000. The rate of excretion, as would be expected, decreases with increasing molecular weight. Consequently, about 14 days after the infusion, when at least 80% of the administered polyvinylpyrrolidone has been excreted, the urine concentration is at the limit of sensitivity of the method of estimation[2]; but there is no indication that excretion suddenly stops. In addition, the residue not accounted for may be excreted by other means—e.g., in fæces and sweat—or may possibly be degraded to very small molecules which cannot be estimated by the present experimental methods. There is evidence, moreover, in one case studied in great detail, that some such degradation does occur. It appears unlikely, therefore, that any appreciable quantity of polyvinylpyrrolidone can remain in the body.

1. Thrower, W. R., Campbell, H. *Lancet*, 1951, i, 1096.
2. Campbell, H., Hunter, G. *Ibid* (in the press).

It is essential that any substance used in a plasma substitute should not interfere with the functioning of the normal blood components. In this connection polarographic studies have shown that the polyvinylpyrrolidone used in plasmosan does not form complexes with the plasma cations—sodium, potassium, and calcium—although it forms weak complexes with some polyvalent ions, such as chromium.

A full account of these studies, together with their bearing on the mechanism of the passage of large molecules through the glomeruli, will be published elsewhere. This work was carried out in collaboration with my colleagues, Mr. P. O. Kane and Mrs. Ingrid G. Ottewill, PH.D.

Physical Chemistry Department,
May & Baker Limited,
Dagenham, Essex. HUGH CAMPBELL.

Obituary

CHARLES HERBERT MELLAND
M.D. Lond., B.Sc. Vict., F.R.C.P.

Dr. Charles Melland, consulting physician to Manchester Royal Infirmary, who died on Jan. 8, was descended from a family of long-living doctors practising in the Bakewell area of Derbyshire. His father Frederick was a practitioner of great repute who, at the age of 90, presided at the gathering of old residents of the Manchester Royal Infirmary assembled to take farewell of the old building in Piccadilly.

Born in 1872, Charles was educated at the Manchester Grammar School and the medical school at Owens College. He qualified in 1894 and held a resident and other hospital posts before he was elected physician to Ancoats and the Northern Hospitals. One of his junior hospital appointments was that of director of the infant clinical laboratory at the infirmary, a very different post from that of the present day. The director cut the sections and carried out the blood-counts, and it was here that Melland began to take an interest in diseases of the blood —a subject in which he later specialised and on which he wrote several papers. In 1906 he was appointed medical investigator to the Royal Commission on the care and control of the feeble-minded. His report on the prevalence of epilepsy in Manchester was included in the commission's blue-book, published in 1908, and this work led to his appointment as honorary physician to the National Association for the Feeble-minded.

He was appointed to the medical staff at the Manchester Royal Infirmary in 1914, but the war intervened and he left to serve in the R.A.M.C. On his return he was also appointed lecturer in clinical medicine at the university. In 1921 he was elected F.R.C.P. He retired from the staff of the Infirmary in 1932, but he continued in consulting practice.

W. B. writes: "A good walker and an enthusiastic camper who by no means chose pleasant pastures for the pitching of his tent, Melland was keenly interested in the university lacrosse and mountaineering clubs. The students showed their appreciation by electing him president of the athletic union, and he was president of their lacrosse club when he died, having held the office actively for many years. Until well over 60 he could be seen in an old sports coat and grey flannel trousers, looking disreputable but supremely happy, keeping goal for the B team courâgeously and in no unskilful manner.

"Charlie Melland was a physician of the old school; kind, gentle, courteous and friendly, giving a sound opinion on a difficult case. With the outbreak of the second world war, he was recalled to duty at the Infirmary and throughout the war years he held a regular outpatient clinic and helped in other ways. Those returning from the Forces found him much changed; yet, despite the handicaps of ill health and advancing age, he could be counted on to attend, with a progressively lengthening beard, the dinners of the Infirmary medical board and the suppers of the lacrosse club. He even continued to watch the matches of his beloved team and to help with encouragement and sound advice. He was watching a match at the age of 80 on a foggy December afternoon on the day his last illness began. Few octogenarians will be mourned and missed so much by the present generation of undergraduates."

Dr. Melland was predeceased by his wife. He leaves a son and a daughter.

BRYAN LESLIE JEAFFRESON
M.D. Lond., F.R.C.S., F.R.C.O.G.

Mr. Bryan Jeaffreson, gynæcological surgeon to the United Leeds Hospitals, died on Jan. 7, after a short illness, at the age of 56.

He stemmed from the Jeaffresons of Framlingham in Suffolk: many of them were well-known surgeons, and the most famous of them is said to have performed the first successful ovariotomy in England, in 1836. From Hurstpierpoint College he went to St. Bartholomew's Hospital; but he spent two years as a private during the first world war, before qualifying in 1921. After serving at St. Bartholomew's as house-surgeon and resident internal midwifery assistant, he went to Sheffield, where he was senior resident officer at the Jessop Hospital, and to Birmingham, where he held a combined registrarship to the gynæcological department and a surgical unit. At this stage of his career he came under the influence of those great teachers, Miles Phillips and Beckwith Whitehouse. Meanwhile he had taken the London M.D. in 1924 and the F.R.C.S. in 1928. In 1929 he was appointed university tutor in obstetrics and gynæcology at Leeds, and after barely a year he became assistant surgeon to the Hospital for Women. There was no vacancy at the Maternity Hospital until 1934, when he became obstetric surgeon there on Dr. McGregor Young's retirement.

He examined for the Universities of Manchester and Sheffield besides his own, and had for many years been presiding examiner at Leeds for the Central Midwives Board. This was a part of his work that he particularly enjoyed, and he carried it out with skill and sympathy. He served on the council of the Royal College of Obstetricians as a member from 1943 to 1949, and in 1950 he was elected to the fellowship. Last year the organisation of the British Congress of Obstetrics and Gynæcology which was held in Leeds fell mainly on him. But the task was congenial, and when the congress was over letters from colleagues from all over the British Isles and from many other parts of the world bore witness to the signal efficiency of his work.

A. M. C. writes: "Though Bryan Jeaffreson had a keen interest in surgical technique, it was perhaps as a teacher that he reached his greatest heights. His ward rounds and outpatient teachings were always crowded. He had a quiet, clear, and dogmatic way of making his points. He was a keen member of the North of England Obstetrical and Gynæcological Society, and we often travelled to meetings together. The last occasion was last month when the council of the society elected him president for 1953, and he appreciated this election as a great honour, though with typical humility he was doubtful of his capacity to do justice to the duties involved; for despite his considerable talents, he was modest to a fault. No man could have wished for a more loyal or dependable colleague."

Mr. Jeaffreson leaves a widow, a son, and a daughter.

WILLIAM JONES RICHARDS
F.R.C.S.

Mr. Richards died on Jan. 1 at Port Talbot, Glam, where he had practised for many years as a surgical consultant on industrial insurance.

He was born in 1873 and he was educated privately and at St. Bartholomew's Hospital. After qualifying in 1897 he spent a few years in the Middlesex county mental service and then turned to surgery, taking the F.R.C.S. in 1906. He held clinical assistantships at St. Luke's Hospital and the Royal London Ophthalmic Hospital, before he settled at Port Talbot. At the outbreak of the 1914–18 war he joined the R.A.M.C. and he served in a field ambulance at Gallipoli and as a surgical specialist in Palestine with the rank of major.

D. R. writes: "Richards had built a reputation for a sound and fair opinion. He was a man of many interests, always ready to help in local activities provided it did not involve any public office. His loss will be felt in many circles and perhaps most in the Church he served so well."

Notes and News

M.R.C. RESEARCH POSTS

TODAY the Medical Research Council employs nearly 1500 people: of these 153 are doctors (or dentists) and a further 286 are science graduates. To these workers the council offers an opportunity for a life-time career in research comparable to the academic posts available at universities. Would-be research-workers, especially perhaps those who do not wish to teach, will therefore study with interest the booklet lately compiled by the council which sets out the opportunities for appointment to its scientific staff. Some of the research staff work in the council's own laboratories—the largest is the National Institute for Medical Research at Mill Hill—but others are ensconced in M.R.C. units in hospitals and universities throughout the country. The council does not appoint staff centrally, but leaves the director of each unit to recommend that a post should be offered to a particular worker. For the guidance of candidates the booklet contains a list of these units and a survey of the council's research programme, and candidates are encouraged in the first instance to write to the director of the unit where they would like to work. But the council's headquarters staff is always willing to advise the hesitant as to the unit to which they should apply. Copies of the booklet, which also sets out conditions of work and terms of service, may be had from the offices of the council, 38, Old Queen Street, London, S.W.1.

MEDICAL AND DENTAL DEFENCE UNION OF SCOTLAND

Scotland's own medical defence society has now passed its half-century; but the latest report on its activities[1] suggests that it is in the full bloom of vigorous youth. In its jubilee year, as in previous years, the membership increased; and at Aug. 8, 1952, this stood at 7491, compared with 7189 a year earlier. The council remarks that, partly owing to the Legal Aid Scheme, cases taken to court have tended to increase; and furthermore "the Courts are inclined more and more to apply the maxim *res ipsa loquitur*." The report draws attention to the need for care in injecting penicillin or other substances; during the year there were several instances in which an injection of penicillin into the buttock affected the sciatic nerve.

CANCER RESEARCH IN INDIA

WHILE inaugurating, on Dec. 30, in Bombay, the fifth session of the International Cancer Research Commission, India's health minister also opened the Indian Cancer Research Centre, which is the first of its kind in Asia. The central government have borne the main part of the cost of erecting and equipping this centre, and have also undertaken to meet the entire costs of maintenance. Dr. V. R. Khanolkar, director of the centre, has been appointed president of the International Cancer Research Committee.

The meetings of the commission were attended by delegates from more than 20 countries. One of the main subjects discussed was the geographical distribution of cancer. It was generally felt that there was need for more scientific investigation in the Orient of differences in diet, which apparently gave rise to varied manifestations of the disease.

SWIFT'S MALADY

"THE mystery about Swift is that there ever should have been any mystery about him,"[2] Sir Russell Brain remarked in his address to the Royal College of Physicians of Ireland, when they made him a fellow. Adroitly disentangling the evidence about this unfortunate genius, he pointed out that, as far as his physical disorders went, Swift suffered for many years from what was undoubtedly Ménière's syndrome, with vertigo and deafness; and later from cerebral arteriosclerosis and involutional melancholia. The vertigo first appeared in 1710, just before his 43rd birthday; the deafness came on four years later. Many years afterwards he wrote to a friend, "I walk like a drunken man and am deafer than you ever knew me." He tried many remedies, and it seems many doctors, without deriving the least benefit from either. Spa waters made his legs swell and his vertigo worse, which, as Sir Russell remarked, is not surprising in view of the modern treatment of aural vertigo by restriction of fluid intake. The syndrome persisted longer with him than is usual, for giddiness afflicted him for most of the rest of his life—and he died at 78. But there is nothing mysterious about that: for the speaker was able to outmatch him with a patient who had the disorder for 50 years, and who also was getting distressing attacks of vertigo when he was over 70. As for Swift's insanity (which he invited his friends to expect by that melancholy remark about dying at the top), he showed no symptoms suggesting mental deterioration till he was over 70, by which time he was almost completely deaf, and with impaired sight, though he refused to wear spectacles. At 74 he was still writing rational, if depressed, letters; but during the following year he had what Sir Russell believes to have been a cellulitis of the orbit, which was extremely painful, and possibly caused some thrombophlebitis of the superior petrosal sinus and of the cortical veins draining Broca's area; for after it he suffered from aphasia. Even then, his cousin (confusingly named Deane Swift) reported: "Sometimes he will not utter a syllable, at other times he will speak incoherent words: but he never yet, as far as I could hear, talked nonsense, or said a foolish thing." For the last 3 years of his life he suffered great despondency and hardly talked at all. He is said to have died after convulsions lasting 36 hours, and a post-mortem examination revealed "much water on the brain"—a likely enough accompaniment of arteriosclerotic atrophy. His last bust suggests a right facial palsy, which might well accompany a lesion of Broca's area.

Swift's emotional disorder, displayed in his relations with Stella, is, Sir Russell suggested, equally devoid of mystery. "He was a single man of irreproachable morals; he loved a woman for years and he did not publicly marry her." Perhaps he did marry her, privately; but if so it makes little difference to the story. He had, Sir Russell thinks—and he supports the idea with satisfactory evidence—an obsessional personality, emotionally arrested at an immature level of development. A common enough state: but in Swift it was combined with intellectual genius. In attempting to reconcile the intellect and the emotions, each of us engages in a daily balancing feat; when the two are widely disparate in their development the feat becomes impossible, and the unfortunate subject suffers accordingly. Swift's emotional immaturity made married life impossible to him; but he could give

> "... Friendship in its greatest Height,
> A constant rational Delight." ...

(an offer made, in fact, not to Stella but Vanessa). Mercifully for him, Stella was able to accept it, though Vanessa was not.

NEW AUSTRALASIAN RESEARCH FUND

THE Life Offices' Association for Australasia has established a fund to promote scientific and medical research in Australia and New Zealand. Announcing this, the *Medical Journal of Australia* (Jan. 3) says that about £25,000 per annum is likely to be spent; sums will be payable either as grants-in-aid or for research fellowships. To begin with, the fund will be used to foster research in cardiovascular diseases.

FILM ON CONTROLLED HYPOTENSION

A NEW film on the reduction of surgical hæmorrhage by controlled hypotension was shown at the Royal College of Surgeons, London, on Jan. 8. This film, produced by Messrs. May & Baker Ltd., is in colour with sound, and is intended primarily for anæsthetists.

A brief introduction on the desirability of reducing surgical hæmorrhage is followed by an animated sequence illustrating the factors affecting blood-flow and blood-pressure. The principles of ganglionic transmission and paralysis are outlined, and the action of the more usual ganglion paralysants, such as tetraethylammonium bromide, procaine, nicotine, and hexamethonium bromide, is demonstrated. The clinical section shows in detail the use of hexamethonium bromide to bring about controlled hypotension and, by suitable positioning of the patient, postural ischæmia for hemiresection of the mandible and block dissection of the glands of the neck. Further operations illustrate the main benefits from the technique; these include shortened operation time, clarity of vision in difficult operation fields, reduction in the number of operations necessary for a particular patient, and sometimes reduction of total blood-loss.

The film was introduced by Sir Cecil Wakeley, P.R.C.S. Sir Archibald McIndoe emphasised that it dealt primarily with an anæsthetic technique which was of great value to surgery, and particularly to plastic surgery. He added, however, that this technique should be used only by experienced anæsthetists.

1. Medical and Dental Defence Union of Scotland Ltd., 113, St. Vincent Street, Glasgow, C.2. Fiftieth Annual Report, 1952.
2. *Irish J. med. Sci*, August, 1952, p. 337.

University of London

On Jan. 7 the following degrees were conferred :

M.D. Branch I (medicine).—P. J. Banks, A. F. Barnett, Herbert Barrie, Barnett Bass, Mary Bateman, S. I. Cohen, Phyllis M. E. Cook, Betty B. Dyer, F. R. Ellis, D. G. Evans, D. M. D. Evans, D. D. Felix Davies, I. T. Gabe, P. J. D. Heaf, Cherry D. Heath, B. W. Jaslowitz, R. P. V. Jayewardene, A. M. Johnson, J. C. Leonard, Wilfrid E. Medd, L. P. A. Newborne, C. P. Newcombe, B. E. C. Nordin, M. A. Pears, Betty E. Powe, S. J. G. Semple, R. G. Shorter, K. A. Sowden, C. J. Stevenson, Frank Taylor, W. B. Thomson, Brenda D. Van Leuven, B. W. Webb.

M.D. Branch II (pathology).—Aleck Bernstein, J. L. Brennan, Patricia C. Brown, L. H. Collier, H. R. Colquitt, J. C. Crook, Phyllis Dagnall, David Marrack, D. J. O'Brien, F. R. Philps, K. A. Porter, J. I. Pugh, M. V. Salmon, W. J. L. Sladen, C. S. Treip, S. P. B. Way, W. J. Williams, A. L. Woolf, E. A. Wright.

M.D. Branch III (psychological medicine).—A. A. Cashmore, John Denham, Aleck Folkson, W. P. Gurassa, Julius Merry, *D. J. Parr, H. P. Tarnesby, D. L. C. Thomas, G. C. Turle.

M.D. Branch IV (midwifery and diseases of women).—J. C. Brace, Samuel Burke, Frank Denny, James Elstub, G. W. Garland, D. W. S. Gordon, J. M. Holmes, Rustam Moolan-Feroze, Elsie M. Sibthorpe, N. G. G. Talbot.

M.D. Branch V (hygiene).—J. D. B. Andrews, J. R. Mayers, Anita J. Thomas.

M.D. Branch VI (tropical medicine).—J. C. L. Adams, P. B. Adamson, A. C. S. Hobson.

* Mark of distinction, university medal.

University of Bristol

The dissertations of A. O. Chick and E. J. Field for the degree of PH.D. in the faculty of medicine have been approved.

University of St. Andrews

Sir Heneage Ogilvie, consulting surgeon to Guy's Hospital, London, has been appointed praelector in the faculty of medicine for 1952–53. During his tenure of office he will take part in the teaching and clinical work of the department of surgery and deliver a series of open lectures.

Royal College of Surgeons of England

At a meeting of the council held on Jan. 8, with Sir Cecil Wakeley, the president, in the chair, the Cecil Joll prize for 1953 was awarded to Mr. Geoffrey Keynes. A Laming Evans research fellowship was awarded to Dr. Angus McPherson for his research into the blood-flow changes in the limbs in poliomyelitis. A Hunterian professorship was awarded to Prof. H. R. Dew for a lecture to be delivered during his visit as Sir Arthur Sims Commonwealth travelling professor in 1953. Erasmus Wilson demonstratorships were awarded to Mr. V. E. Negus, Sir Frank Colyer, and Dr. B. E. Heard, and an Arnott demonstratorship to Mr. L. E. C. Norbury.

The following were elected to the fellowship of the Faculty of Anæsthetists :

Dr. J. G. Bourne (Salisbury), Dr. H. G. Epstein (Oxford), Prof. Fernando Hudon (Quebec), Dr. J. V. Mitchell (Oxford), Dr. G. Jackson-Rees (Liverpool), Dr. Arnold Robertson (Brisbane), Dr. A. Slater (New Zealand), Dr. B. N. Sircar (Bombay).

Diplomas of membership were granted to A. G. N. Calder, K. G. Lupprian, and N. E. Pitts. Diplomas were also awarded, jointly with the Royal College of Physicians, to the following :

D.C.H.—Anima Banerjee.

D.A.—D. E. Argent, Anima Banerjee, D. W. Barron, M. McC. Burrows, K. B. Chambers, C. C. D. Chandler, H. S. Cohen, E. A. Cooper, J. S. Crawford, D. W. J. Cullingford, L. D. Davidson, B. H. Egerton, Sam Galloon, Rosalinde J. Harrison, Pamela M. Hellings, Frances S. Huxley, E. G. A. Jackson, J. W. Latham, R. A. L. Leatherdale, Samuel McKechnie, A. V. McVey, A. H. B. Masson, R. A. Millar, A. C. Milne, P. R. H. Molesworth, Ruth Molphy, E. J. O'Mullane, Doreen B. Pallot, James Parkhouse, Cecil Pearce, D. J. Pearce, Subramaniam Ponnambalam, L. T. Rees, P. W. H. Robinson, F. M. Sandford, P. H. Simmons, W. D. Turner, D. C. White.

D.L.O.—T. L. Bradbeer, D. C. J. Carter, G. O. Clark, D. A. Clements, J. B. David, J. W. T. Dixon, Apurba Kumar Ghosh, H. V. Jones, Kattesomanahalli Venkatakrishnappa Krishnamurthy, John Lapper, James Littlejohn, Abdessalam Najafi, J. S. Martin, H. W. H. Shepperd, D. W. Stuart, John Konda Suryodayam.

D.P.M.—R. H. Boardman, Kunhunni Nayar Kothaneth, T. R. Malloy, T. L. Pilkington, J. W. Warboys.

D.T.M. & H.—Hashim Barakat, Mohindra Singh Boparai, Tahir Mirza.

D.P.—J. N. Dearnaley, J. S. Elwood, M. M. Friedman, E. M. Stirk, Jean E. D. Taylor.

Royal Faculty of Physicians and Surgeons of Glasgow

At a meeting of the faculty on Jan. 5, with Dr. Andrew Allison, the president, in the chair, Oon Teik Khoo and Nirendra Chandra Mallik were admitted fellows of faculty qua physician.

Nuffield Dental Fellowships

One of the aims of these fellowships is to enable graduates in medicine and science to undertake teaching and fundamental research on dental health and disease. The annual value of a fellowship is between £500 and £800 a year. Further particulars will be found in our advertisement columns.

Medical Research Council

The council invite applications for the following fellowships for 1953–54 :

Rockefeller Travelling Fellowships.—These fellowships are intended for graduates resident in this country who have had some training in research work in clinical medicine or surgery, or in some other branch of medical science, and who are likely to profit by a period of work at a centre in the United States or elsewhere abroad, before taking up positions for higher teaching or research in the United Kingdom. Fellowships tenable in the United States will normally carry a maintenance allowance at the rate of $2600 per annum for a single fellow and $3600 per annum for a married fellow. Provision will also be made for travelling and other approved expenses. Applications should reach the secretary of the council not later than March 15.

Eli Lilly Fellowships.—These fellowships, tenable in the United States, are offered on terms and conditions similar to those attaching to the Rockefeller fellowships.

Dorothy Temple Cross Research Fellowships in Tuberculosis.—These fellowships offer opportunities for study or research to British doctors who intend "to devote themselves to the advancement by teaching or research of curative or preventive treatment of tuberculosis." The fellowships will, as a rule, be awarded to candidates who wish to make their studies or inquiries elsewhere than in the United Kingdom. They provide for the payment of a maintenance allowance at the rate of £650 per annum for a single fellow and £900 per annum for a married fellow. An allowance will also be made for travelling and other approved expenses. Applications by March 15.

Alexander Pigott Wernher Travelling Fellowships in Ophthalmology and Otology.—These fellowships are intended for medical graduates who are likely to profit by a period of work in ophthalmology or otology at a centre abroad before taking up positions for higher teaching and research in these branches of medical science. They are normally tenable for one year. A maintenance allowance at the rate of £650 per annum is offered for a single fellow or £900 per annum for a married fellow ; in addition, an allowance is made for travelling and other approved expenses. Applications by March 31.

Further information about all these fellowships may be had from the secretary of the council, 38, Old Queen Street, London, S.W.1.

Food and the Future

The second meeting in the series on this subject which is being held by the food group and nutrition panel of the Society of Chemical Industry will be held on Wednesday, Jan. 28, at 6.15 P.M., at the Chemical Society's rooms, Burlington House, Piccadilly, London, W.1, when Dr. G. A. C. Herklots and Prof. John Yudkin will discuss Present Methods of Attack on the Problem.

Positive Health Measure in Industry

The Industrial Welfare Society are holding four weekly lectures on this subject on Thursdays at 6 P.M., at their rooms at 48, Bryanston Square, London, W.1. Dr. Neil Marr will speak on Organisation of First Aid in Work Places (Jan. 22), Dr. P. Fitzsimons on Sickness Absenteeism (Jan. 29), Mr. W. F. Floyd, PH.D., on Posture and Movement in Relation to Industrial Health (Feb. 5), and Dr. F. M. Oldershaw on Health Education in Industry (Feb. 12). Further particulars may be had from the administrative officer of the society.

Nuffield Lodge

The Nuffield Foundation and the Nuffield Provincial Hospitals Trust are moving from 12 and 13, Mecklenburgh Square, London, W.C.1, on Jan. 22, 1953, to Nuffield Lodge, Regent's Park, London, N.W.1 (Primrose 8871–5). The National Corporation for the Care of Old People will also be moving to the same address from 33, Doughty Street, W.C.1. The address of the trust's Investigation into the Functions and Design of Hospitals will be 33, Doughty Street, W.C.1 (Terminus 5288) from Jan. 22 until further notice. Nuffield Lodge is the new name given, with the consent of the Commissioners of Crown Lands, to Grove House (opposite St. John's Wood Church), which the foundation has acquired for the future headquarters of itself and associated trusts.

Anglo-French Exchange Bursaries

Applications are invited for bursaries which will be awarded this year to young British doctors under the exchange scheme arranged by the French Embassy in London between the Institut National d'Hygiène in Paris and the Ciba Foundation in London.

The value of the French grants is 60,000 francs a month tax-free, and they will be awarded for periods of two to four months to doctors who wish to obtain clinical experience or carry out medical research in France. The following are members of the British selection board : Prof. Alexander Haddow, Prof. John McMichael ; representatives of the British Council (Dr. Margaret Suttill), the British Postgraduate Medical Federation (Dr. C. F. Hamilton-Turner), and the Medical Research Council (Dr. F. J. C. Herrald) ; joint secretaries, Miss A. M. Vidal-Hall (French Embassy) and Dr. G. E. W. Wolstenholme (Ciba Foundation). Applications should be sent before March 31 to Dr. Wolstenholme, 41, Portland Place, London, W.1.

Award for Research on Infertility

The American Society for the Study of Sterility is offering a prize of $1000 for an essay on infertility and sterility. Essays must be submitted not later than March 1, 1953, and further particulars may be had from Dr. Herbert H. Thomas, assistant secretary of the society, 920 South 19th Street, Birmingham, Alabama.

British Council for Rehabilitation

On Wednesday, Feb. 4, at the Royal College of Nursing, Henrietta Place, London, W.1, the council is to hold a conference on Speeding Recovery Through the Closer Coöperation of Hospitals and Industry. Particulars may be had from the general secretary, at Tavistock House (South), Tavistock Square, W.C.1.

William Gibson Research Scholarship for Medical Women

The Royal Society of Medicine will make the next award of this scholarship (£200 p.a.) in July. It is open to women doctors who are subjects of the British Empire, and it is usually tenable for two years. Further particulars may be had from the Secretary of the Society, 1, Wimpole Street, London, W.1, to whom applications should be sent not later than June 1.

A Blood-donor Marathon

Last weekend Montreal had a "blood-donor marathon." The *Times* (Jan. 12) reports that this started on Saturday morning and continued until midnight on Sunday; and the blood collected was expected to total 1850 pints. The Ex-Service Men's Taxi Association provided free transport for donors, and entertainers gave their services in a non-stop variety show. It was expected that by the end of the marathon 6000 more people would have promised to give blood at a future date.

EMERGENCY BED SERVICE.—In the week ended last Monday applications for general acute cases numbered 1758. The proportion admitted was 80·8%.

Appointments

BALL, KATHLEEN, M.B. Lpool: asst. maternity child M.O., Blackpool.
DOW, J. D., M.C., M.D. Glasg., D.M.R.D.: consultant radiologist, Guy's Hospital, London.
DUNCAN, G. D., M.B. Aberd., D.P.H.: asst. M.O.H. and asst. school M.O., Burton upon Trent.

Births, Marriages, and Deaths

BIRTHS

ATKINSON.—On Jan. 9, at University College Hospital, London, to Iris (nee Bowman), wife of Dr. Michael Atkinson—a daughter.
FAIRLEY.—On Dec. 20, at R.A.F. Hospital, Rinteln, Germany, to Dorothy Jean (nee Orr), wife of Dr. H. Barrie Fairley, D.A.—a daughter.
SCOTT.—On Jan. 3, at Keresley Hospital, Coventry, to Gisele, wife of Dr. James D. Scott—a daughter.
SLEE.—On Jan. 6, at the Churchill Hospital, Oxford, to Joan, wife of Dr. Mark Slee—a son.
VÉREL.—On Jan. 2, at the London Hospital, to Agnes, wife of Dr. D. Verel—a son.

MARRIAGES

BALINT—EICHHOLZ.—On Jan. 2, in London, Michael Balint, L.R.C.P.E., of Devonshire Place, London, to Enid Eichholz, of Porchester Terrace, London.
ROBERTS—WATERS.—On Jan. 5, at Great Hampden, Harold Roberts, M.R.C.S., to Marian Waters.

DEATHS

ABBOTT.—On Jan. 3, at Vallance Gardens, Hove, Horatio White Abbott, M.D. Lausanne, M.R.C.S., late of Holloway, London.
HUGHES.—On Jan. 4, Leslie Edward Hughes, M.C., M.R.C.S., of Cotswold Lodge, Cirencester, Glos.
JEAFFRESON.—On Jan. 7, at Headingley, Leeds, Bryan Leslie Jeaffreson, M.D. Lond., F.R.C.S., F.R.C.O.G.
MARTIN.—On Jan. 6, at Hampstead, Alfred John Martin, O.B.E., M.R.C.S., aged 43.
MELLAND.—On Jan. 8, Charles Herbert Melland, M.D. Lond., F.R.C.P., of Fallowfield, Manchester, aged 80.
RICHARDS.—On Jan. 1, at Port Talbot, Glamorgan, William Jones Richards, F.R.C.S., aged 79.
TENISON MOSSE.—On Jan. 7, Cotton Grimley Tenison Mosse, B.A. Camb., M.R.C.S., of Southminster, Essex.
WARE.—On Jan. 5, Arthur Maitland Ware, M.D. Camb., of Tyting Down, Guildford.

Diary of the Week

JAN. 18 TO 24

Monday, 19th

ROYAL EYE HOSPITAL, St. George's Circus, Southwark, S.E.1
5 P.M. Dr. T. H. Whittington: Refraction Work in the Young and the Old. Aphakia.
HUNTERIAN SOCIETY
8.30 P.M. (Mansion House, E.C.4.) Dr. J. van Laer (The Hague): Auto-mutilation of Prisoners.

Tuesday, 20th

UNIVERSITY OF LONDON, Senate House, W.C.1
6 P.M. Sir Godfrey Thomson, D.SC.: Geometry of Mental Measurement. (First of three lectures.)
BRITISH POSTGRADUATE MEDICAL FEDERATION
5.30 P.M. (London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1.) Mr. A. S. Parkes, D.SC., F.R.S.: Preservation of Living Cells at Low Temperatures.
ROYAL SOCIETY OF MEDICINE, 1, Wimpole Street, W.1
6 P.M. *Section of Pathology.* Prof. G. Payling Wright: Nerve Trunks as Pathways of Infection. (Presidential address.)
INSTITUTE OF DERMATOLOGY, St. John's Hospital, Lisle Street, W.C.2
5.30 P.M. Prof. P. B. Medawar, F.R.S.: Pigmentation.
WEST END HOSPITAL FOR NERVOUS DISEASES, 40, Marylebone Lane, Welbeck Street, W.1
5.30 P.M. Mr. J. Minton: Ocular Manifestations in Nervous Disease: Part I.
SOCIETY FOR THE STUDY OF ADDICTION
8 P.M. (11, Chandos Street, W.1.) Detective-sergeant George Lyle: Dangerous-drugs Traffic in London.
SOUTH WEST LONDON MEDICAL SOCIETY
8.30 P.M. (Bolingbroke Hospital, S.W.11.) Dr. Kenneth Cameron: Common Psychiatric Problems in Childhood.

Wednesday, 21st

UNIVERSITY OF LONDON
6 P.M. Sir Godfrey Thomson: Geometry of Mental Measurement. (Second of three lectures.)
ROYAL SOCIETY OF MEDICINE
8.15 P.M. *Sections of Epidemiology and Preventive Medicine and General Practice.* Dr. E. Maurice Backett, Miss L. A. E. Shaw: An Urban General Practice.
INSTITUTE OF DERMATOLOGY
5.30 P.M. Dr. J. O. Oliver: Inflammation.
INSTITUTE OF UROLOGY, St. Paul's Hospital, Endell Street, W.C.2
4.30 P.M. Mr. J. E. Semple: Differential Diagnosis of Renal Pain.
LONDON ASSOCIATION OF THE MEDICAL WOMEN'S FEDERATION
8.30 P.M. (Royal Free Hospital School of Medicine, 8, Hunter Street, W.C.1.) Sir William MacArthur: History of Smallpox in the British Isles.
MIDLAND MEDICAL SOCIETY
8.15 P.M. (Birmingham Medical Institute, 154, Great Charles Street, Birmingham, 3.) Dr. A. L. M. Feeney, Dr. A. M. Nussey, Dr. W. C. Smallwood, Mr. Charles Rudd: Cortisone and A.C.T.H.
EUGENICS SOCIETY
5.30 P.M. (Burlington House, Piccadilly, W.1.) Mr. J. D. Nisbet, PH.D.: Family Environment and Intelligence.

Thursday, 22nd

UNIVERSITY OF LONDON
6 P.M. Sir Godfrey Thomson: Geometry of Mental Measurement. (Last of three lectures.)
UNIVERSITY COLLEGE, Gower Street, W.C.1
5.30 P.M. Prof. F. Bergel, PH.D.: Chemical Aspects of Normal Growth. (First of three lectures.)
BRITISH POSTGRADUATE MEDICAL FEDERATION
5.30 P.M. (London School of Hygiene and Tropical Medicine.) Mr. H. J. Seddon: Nerve Repair.
ROYAL SOCIETY OF MEDICINE
5 P.M. *Section of Urology.* Mr. J. P. Mitchell, Dr. G. S. Andrewes: Clinical Aspects and Pathology of Bladder Neck Obstruction. Mr. M. Caine: Fate of Bladder Neck and Prostatic Cavity after Prostatectomy. Mr. Thomas Moore: Bladder Neck Obstruction in Women.
INSTITUTE OF CHILD HEALTH, The Hospital for Sick Children, Great Ormond Street, W.C.1
5 P.M. Dr. J. G. Scadding: Chronic Cough.
INSTITUTE OF DERMATOLOGY
5.30 P.M. Dr. R. W. Riddell: Pathogenesis of Tinea Capitis.
ST. GEORGE'S HOSPITAL MEDICAL SCHOOL, Hyde Park Corner, S.W.1
5 P.M. Dr. J. Hamilton Paterson: Neurological lecture-demonstration.
LIVERPOOL MEDICAL INSTITUTION, 114, Mount Pleasant, Liverpool, 3
8 P.M. Dr. M. K. Alexander: Case of the Stevens-Johnson Syndrome. Dr. A. H. Cruickshank: Case of Chiari's Disease. Dr. K. McCarthy: Generalised Vaccinia.
UNIVERSITY OF ST. ANDREWS
5 P.M. (Medical School, Small's Wynd, Dundee.) Prof. C. G. Rob: Treatment of Intermittent Claudication and Gangrene of Toes by Arterial Grafting.

Friday, 23rd

ROYAL EYE HOSPITAL
5.30 P.M. Mr. Howard Reed: Visual Fields.
INSTITUTE OF DERMATOLOGY
5.30 P.M. Dr. I. Muende: Anomalies of Pigmentation.

Saturday, 24th

BRITISH ASSOCIATION OF ALLERGISTS
11 A.M. (1, Wimpole Street, W.1.) **Annual general meeting.**

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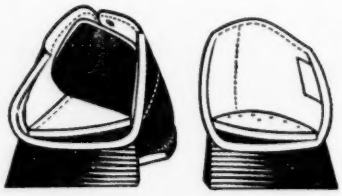

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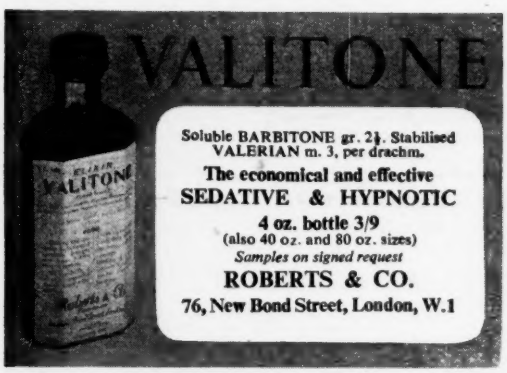

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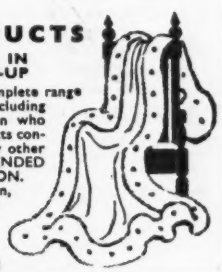

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The Terms and Conditions of Service of Hospital Medical and Dental Staff apply to all N.H.S. hospital posts we advertise, unless otherwise stated. Canvassing disqualifies, but candidates may normally visit the hospital by appointment.

Academic and Educational

ROYAL COLLEGE OF SURGEONS OF ENGLAND

COURT OF EXAMINERS

Notice is hereby given that the Council on 2TH MARCH, 1953, will elect 2 Members of the Court of Examiners. The Examiners retiring in rotation are Mr. N. C. Lake and Mr. R. S. Corbett, who are applying for re-election.

Fellows of the College desirous of becoming candidates for the office must make application, in writing, to the Secretary on or before 3rd February, 1953.

KENNEDY CASSELS, Secretary.

Lincoln's Inn-fields, London, W.C.2.

SPECIAL COURSE IN CARDIOLOGY

to be held at the INSTITUTE OF CARDIOLOGY, NATIONAL HEART HOSPITAL, Westmoreland-street, W.1

23RD FEBRUARY–6TH MARCH, 1953

Monday, 23rd February
9.30 A.M. . Angina Pectoris . . . . Dr MAURICE CAMPBELL
11 A.M. . . Common Errors in Diagnosis . . Dr. PAUL WOOD
2 P.M. . . Outpatient Clinic . . . . Dr. GRAHAM HAYWARD
Tuesday, 24th February
10.15 A.M. . . Ward Teaching
2 P.M. . . Outpatient Clinic . . . . Dr. PAUL WOOD
Wednesday, 25th February
10.15 A.M. . . Outpatient Clinic . . . . Dr. WALLACE BRIGDEN
2 P.M. . . Outpatient Clinic . . . . Dr. MAURICE CAMPBELL
Thursday, 26th February
9.30 A.M. . . Treatment of Heart Failure . . Dr. GRAHAM HAYWARD
11 A.M. . . Hypertension . . . . Dr. WILLIAM EVANS
2 P.M. . . Outpatient Clinic . . . . Dr. D. EVAN BEDFORD
Friday, 27th February
9.30 A.M. . . Rheumatic Heart Disease I . . Dr. D. EVAN BEDFORD
11 A.M. . . Congenital Heart Disease I . . Dr. WALLACE BRIGDEN
2 P.M. . . Outpatient Clinic . . . . Dr. WILLIAM EVANS
Monday, 2nd March
9.30 A.M. . . Cardiac Infarction . . . . Dr. MAURICE CAMPBELL
11 A.M. . . Congenital Heart Disease II . . Dr. WALLACE BRIGDEN
2 P.M. . . Outpatient Clinic . . . . Dr. GRAHAM HAYWARD
Tuesday, 3rd March
10.15 A.M. . . Outpatient Clinic . . . . Dr. AUBREY LEATHAM
2 P.M. . . Outpatient Clinic . . . . Dr. PAUL WOOD
Wednesday, 4th March
10.15 A.M. . . War Teaching
2 P.M. . . Outpatient Clinic . . . . Dr. MAURICE CAMPBELL
Thursday, 5th March
9.30 A.M. . . Sub-acute Bacterial Endocarditis . . Dr. GRAHAM HAYWARD
11 A.M. . . Pericardial Disease . . . . Dr. WILLIAM EVANS
2 P.M. . . Outpatient Clinic . . . . Dr. D. EVAN BEDFORD
Friday, 6th March
9.30 A.M. . . Rheumatic Heart Disease II . . Dr. D. EVAN BEDFORD
11 A.M. . . Clinico-Pathological Conference . . Dr. PAUL WOOD, Dr. R. HUDSON
2 P.M. . . Outpatient Clinic . . . . Dr. WILLIAM EVANS

The fee for this course is 12 guineas, payable in advance.
All applications to be addressed to the Dean.

INSTITUTE OF LARYNGOLOGY AND OTOLOGY

330–332, Gray's Inn-road, London, W.C.1
(UNIVERSITY OF LONDON)

The next ADVANCED REVISION COURSE for M.S. and Final F.R.C.S. Students commences on 9TH FEBRUARY, 1953. The course has been arranged as a part-time one in order to meet the circumstances of students holding appointments. It runs for 10 weeks and the fee is £21.

The next COMPREHENSIVE COURSE especially suitable for D.L.O. Parts I and II Students commences on 23RD FEBRUARY, 1953. The course is a whole-time one—3 months basic sciences in preparation for Part I ; 5 months clinical for Part II. Fee £52 10s.

Detailed syllabus of either course obtainable from the Dean.

UNIVERSITY OF MANCHESTER

DIPLOMA IN MEDICAL RADIOTHERAPY R.C.P. AND S. ENG.

A course of instruction in Radiotherapy will begin at the Christie Hospital and Holt Radium Institute, Manchester, on WEDNESDAY, 8TH APRIL, 1953. This will continue until the end of January, 1954, after which students must still spend a further 15 months working either in the Holt Radium Institute or in another approved hospital. Inclusive fee £52. Lectures and practical demonstrations will be given in the following subjects :

Principles and Practice of Radiotherapy . . Dr. RALSTON PATERSON and Radiotherapy Staff.
Physics as applied to Radiotherapy . . Mr. W. J. MEREDITH and Physics Staff.
Radiobiology and Pathology . . Dr. E. PATERSON, Dr. W. M. DALE and Dr. H. RUSSELL.

There are some Junior appointments available at the Christie Hospital under the National Health Service for which successful candidates would be eligible to apply. Special consideration will be given to candidates possessing a higher qualification in medicine or surgery (for whom posts as Registrars may be available). Further information may be obtained from the Director, Holt Radium Institute, Wilmslow-road, Manchester, 20.

Applications must be sent to the Dean of the Medical School, University of Manchester, and all applicants will be required to attend for interview.

THE UNIVERSITY OF MANCHESTER

FACULTY OF MEDICINE

DIPLOMA IN DIAGNOSTIC RADIOLOGY (R.C.P. AND S. ENG.)

A Course of instruction for the above Diploma will commence on 2ND MARCH, 1953, and extend over 24 months. The course is full-time, non-resident : inclusive fee £52.

Applications are invited from registered medical practitioners who fulfil the requirements as to previous medical experience laid down by the Examining Board in England (D.M.R.D. Regulations obtainable from the London Conjoint Board, 8–11, Queen-square, London, W.C.1).

A limited number of posts will be available at a salary of £670 p.a., which may be held while taking the course. These posts are at present being advertised by the Manchester Regional Hospital Board and application should be made as directed in the advertisement.

Application to take the course should be made independently to the Dean of Postgraduate Medical Studies, University of Manchester, not later than Tuesday, 20th January, 1953.

UNIVERSITY OF GLASGOW

MACEWEN MEMORIAL LECTURE

The Macewen Memorial Lecture will be delivered by MATTHEW J. STEWART, C.B.E., LL.D., M.D., F.R.C.P. (formerly Professor of Pathology, University of Leeds), in the Lecture Theatre, Chemistry Building, on MONDAY, 26TH JANUARY, 1953, at 3 P.M.

Subject : "Ulcer-Cancer of the Stomach."

The Lecture is free and open without ticket to members of the University and to the public.

THE NUFFIELD FOUNDATION

FELLOWSHIPS AND SCHOLARSHIPS IN DENTISTRY

The Nuffield Foundation invites applications from citizens of the United Kingdom, for Fellowships and Scholarships in Dentistry. To help the advancement of teaching and research on dental health and disease, the Foundation is prepared to award a number of Fellowships

(i) to enable selected men and women with dental qualifications to receive such additional training in pure and applied science as is desirable to fit them for an academic career in dentistry, and

(ii) to enable selected university graduates in medicine and science to receive training that will qualify them to undertake teaching and fundamental research on dental health and disease.

The Foundation is also prepared to award a limited number of Scholarships to assist students of outstanding ability attending a university dental school to devote 1 or 2 years to further studies of the basic sciences.

Applications for Fellowships should be received by 1st March annually and for scholarships by 30th June annually. Copies of the conditions of both fellowships and scholarships and the application forms are obtainable from the Secretary, Nuffield Foundation, Nuffield Lodge, Regent's Park, London, N.W.1.

L. FARRER-BROWN, Secretary of the Nuffield Foundation.

GUY'S HOSPITAL MEDICAL SCHOOL. Applications are invited for an additional Full-time RESEARCH FELLOWSHIP in the Thoracic Surgical Unit for research on cardiovascular problems. It is desirable that applicants should possess a higher qualification in surgery. Salary (in the range £775–£1100) will depend upon the experience of the person appointed.

Applications, with the names of 3 referees, should be sent to the Dean, Guy's Hospital Medical School, London Bridge, S.E.1, not later than 31st January, 1953.

UNIVERSITY OF GLASGOW. Applications are invited for I.C.I. RESEARCH FELLOWSHIPS in Biochemistry, Chemistry, Engineering, Pharmacology or Physics, to which some appointments may be made during the current academic year. The appointments will date from 1st October, 1953. The salary will depend upon qualifications and experience, but will be within the range £600–£900 p.a., together with F.S.S.U. benefits and family allowances.

Applications (8 copies), with a list of publications and names of 2 referees, should be sent not later than 28th February, 1953, to the undersigned, from whom further particulars may be obtained.

ROBT. T. HUTCHESON, Secretary of University Court.

DALHOUSIE UNIVERSITY. Medical Faculty. Dalhousie University advertises the combined position of ASSOCIATE PROFESSOR OF PATHOLOGY AND ASSOCIATE PROVINCIAL PATHOLOGIST for the Province of Nova Scotia. Duties of the occupant would be evenly divided between teaching and routine pathological work. Beginning salary $6000 a year plus a cost-of-living bonus.

Apply, with references, to—
Dr. N. G. B. MCLETCHIE, Provincial Pathologist.
Dalhousie Medical School, Halifax, N.S.

UNIVERSITY OF MELBOURNE, Australia. Applications are invited for the position of CARDEN RESEARCH FELLOW for research into the cause and cure of cancer. The salary will be £A1734–£A2234 p.a., including cost-of-living allowance (at present £A234). Superannuation similar to F.S.S.U. will be arranged.

Further particulars and information as to the method of application should be obtained from the Secretary, Association of Universities of the British Commonwealth, 5, Gordon-square, London, W.C.1. The closing date for the receipt of applications, in London and Australia, is 31st March, 1953.

UNIVERSITY OF SYDNEY. Applications are invited for the position of SENIOR LECTURER IN PATHOLOGY. The salary of the Senior Lecturer will be in the range of £1050–£1300 (Australian) p.a. (plus cost-of-living adjustment), with annual increments of £50, and is subject to deductions under the State Superannuation Act. The commencing salary will be fixed according to qualifications and experience. The successful applicant will be required to take up duties as soon as possible.

Further particulars and information as to the method of application may be obtained from the Secretary, Association of Universities of the British Commonwealth, 5, Gordon-square, London, W.C.1. The closing date for the receipt of applications, in London and Australia, is 28th February, 1953.

Hospital Services : Senior Appointments

HOSPITAL OF ST. JOHN AND ST. ELIZABETH, 60, Grove End-road, N.W.8. Applications are invited for the post of HONORARY SURGEON to the E.N.T. Department. Candidates must be Fellows of 1 of the Royal Colleges of Surgeons or hold the M.S.

Applications (25 copies), should be sent to the undersigned on or **before 31st January**, 1953. Testimonials are not required, but the names of 3 persons willing to act as referees should be furnished. Sister MARY CLARE, Secretary.

NORTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for appointments as :—

(1) Full-time ASSISTANT RADIOLOGIST (Senior Hospital Medical Officer grade), Chase Farm and other hospitals in the Enfield Group.

(2) Part-time CONSULTANT ANÆSTHETIST, St. Margaret's Hospital, Epping. (4 sessions a week.)

(3) Part-time CONSULTANT PHYSICIAN in Physical Medicine, Queen Elizabeth Hospital for Children, E.2. (2 sessions a week.)

(4) Part-time CONSULTANT PHYSICIAN in Physical Medicine, Connaught Hospital, E.17 (2 sessions a week), Forest Hospital, Buckhurst Hill (1 session a week), and Woodford Jubilee Hospital (1 session a week). Joint appointment.

Separate applications (6 copies), indicating post concerned and detailing private address, date of birth, qualifications and experience, present appointment(s) (including number of sessions) and grade, and names of 3 referees, should reach the Secretary, 11A, Portland-place, London, W.1, by Saturday, 31st January, 1953.

SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD requires Whole-time ASSISTANT PSYCHIATRIST (Senior Hospital Medical Officer grade) at Springfield Hospital, S.W.17; a progressive hospital providing all forms of modern treatment and catering for psychoneurotics by means of special neurosis centres.

Applications (5 copies), giving date of birth, qualifications, experience, names of 3 referees, to Secretary (S.1), South West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 31st January, 1953. Applicants may visit Hospital by local arrangement.

THE HOSPITAL FOR SICK CHILDREN, Great Ormond-street, London, W.C.1. OFFICE OF NEUROLOGIST. The Board of Governors invite applications for the appointment of NEUROLOGIST to the Hospital. He will be required to attend, in the first instance, 3 sessions per week.

Further particulars and form of application, which must be returned not later than 9th February, 1953, may be obtained from the undersigned.

H. F. RUTHERFORD, House Governor and Secretary.

BEDFORD (near). CLAPHAM PARK REHABILITATION CENTRE. RESIDENT PHYSICIAN required at above Centre. Candidates should have experience of rehabilitation—Diploma in Physical Medicine an advantage. Commencing salary £1300 rising to £1700, or by negotiation. Charge for residential emoluments to be fixed by agreement. Superannuation Scheme.

Applications to—

P. F. POLLARD, Secretary, Manor House Hospital.
Golders Green, London, N.W.11.

MANCHESTER REGIONAL HOSPITAL BOARD invite applications for the whole-time resident post of CONSULTANT PSYCHIATRIST AND MEDICAL SUPERINTENDENT of the Royal Albert Hospital, Lancaster (920 mental deficiency beds). Detached house available on Hospital estate. Applicants must be of high professional standing with wide experience in mental deficiency, and possess higher degrees or diplomas.

Application forms can be obtained from the Senior Administrative Medical Officer to the Board at Cheetwood-road, Manchester, 8, and should be returned to be received not later than 29th January, 1953.

MANCHESTER REGIONAL HOSPITAL BOARD invite applications for the additional post of CONSULTANT ANÆSTHETIST (whole-time or maximum part-time) to the South Manchester Hospital Centre, mainly at Wythenshawe (General) and Baguley (Thoracic) Hospitals, but with some duties also at Withington (General) Hospital. Wide experience and D.A. essential. Successful candidate will be required to live in or near South Manchester.

Application forms may be obtained from the Senior Administrative Medical Officer to the Board at Cheetwood-road, Manchester, 8, and should be returned to be received not later than 29th January, 1953.

MANCHESTER REGIONAL HOSPITAL BOARD invite applications for the whole-time non-resident post of ASSISTANT ANÆSTHETIST to work under the general guidance of the Group Consultant at the Barrow and Furness Hospital Centre (North Lonsdale and Roose Hospitals, Barrow ; Ulverston Hospital, &c.). Salary £1300–£50–£1750. Successful candidate will be required to live in or near Barrow.

Application forms may be obtained from the Senior Administrative Medical Officer to the Board at Cheetwood-road, Manchester, 8, and should be returned to be received not later than 31st January, 1953.

MANCHESTER REGIONAL HOSPITAL BOARD invite applications for the whole-time non-resident post of TUBERCULOSIS PHYSICIAN AND MEDICAL OFFICER in charge of the M.M.R. Unit based on Preston and covering North Lancashire, Blackpool and Barrow. Successful candidate will perform regular clinical duties in a Chest Team under general guidance of a Consultant. Salary £1300 (at age 32)–£50–£1750.

Application forms and further information can be obtained from the Senior Administrative Medical Officer to the Board at Cheetwood-road, Manchester, 8, and should be returned to be received not later than 9th February, 1953.

NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. CONSULTANT E.N.T. SURGEON required for 7 half-days a week, 4 at Bedford General Hospital, Kimbolton-road, Bedford, and 3 at St. Albans City Hospital, St. Albans, Herts. Hospitals may be visited by direct appointment.

Detailed applications, including date of birth, and names of 3 referees, to Secretary, North West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 21st February, 1953.

PLYMOUTH CLINICAL AREA. South-Western Regional HOSPITAL BOARD. Applications are invited from registered medical practitioners for the appointment of CONSULTANT RADIOLOGIST in the Plymouth Clinical Area which comprises Plymouth, Kingsbridge, Tavistock, Launceston, Bude and Liskeard. The appointment may be held either on a whole-time or maximum (9 sessions) part-time basis. Applicants should have had wide experience in radiology, and possession of the Diploma in Medical Radiology is essential. The successful applicant will be required to work mainly at the South Devon and East Cornwall Hospital, Plymouth, but may be required to work at other hospitals in the Clinical Area as determined by the Regional Board from time to time.

Applications (12 copies), stating date of birth, qualifications and experience, together with 12 copies of 2 testimonials, and the names and addresses of 2 referees, should be sent to the Secretary of the Regional Hospital Board, 27, Tyndalls Park-road, Bristol, 8, not later than 7th February, 1953.

SCOTLAND. WESTERN REGIONAL HOSPITAL BOARD. Applications are invited from suitably qualified medical practitioners for the appointment of Whole-time BACTERIOLOGIST for the Ayr County Area, based at Ayrshire Central Hospital, Irvine, with salary on the scale £1300–£50–£1750. The above appointment will be subject to the National Health Service (Scotland) superannuation regulations.

Applications (16 copies), stating date of birth, qualifications, and experience, and present appointment, and giving the names of 3 referees, should be submitted not later than 30 days after the publication of this advertisement to the Secretary, Western Regional Hospital Board, 64, West Regent-street, Glasgow, C.2.

SHEFFIELD REGIONAL HOSPITAL BOARD. Required immediately, Whole-time Locum ANÆSTHETIST for the Barnsley Hospitals and the Montagu Hospital, Mexborough, for a minimum period of 3 months. Remuneration 31½ guineas or 45 guineas per week, according to status.

Applications should be sent to the Secretary, Sheffield Regional Hospital Board, Fulwood House, Old Fulwood-road, Sheffield, 10.

SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for the appointment of a Whole-time ASSISTANT PATHOLOGIST to work under the Group Pathologist in the Redhill (Surrey) Group of hospitals. Salary scale £1300–£50–£1750 p.a. Duties mainly at Redhill County Hospital. Candidates should have good general experience in clinical pathology and particularly in hæmatology.

Applications (5 copies), stating date of birth, qualifications, experience, and present appointment(s), and giving the names and addresses of 3 referees, should be made by letter and sent to the Secretary (S.1), South West Metropolitan Regional Hospital Board, 11A, Portland-place, London, W.1, to arrive not later than **31st** January, 1953. Applicants may visit the hospitals by local arrangement.

SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD requires Part-time CONSULTANT OBSTETRICIAN AND GYNÆCOLOGIST for 8 half-days per week—Guildford Group of Hospitals (7 half-days per week) and Farnham (Surrey) Group (1 half-day per week). Separate applications in respect of either Group would be considered.

Applications (5 copies), giving date of birth, qualifications, experience, 3 referees, to Secretary (S.1) South West Metropolitan Regional Hospital Board, 11A, Portland-place, W.1, by 7th February, 1953. Applicants may visit hospitals by local arrangement.

SOUTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited to fill a vacancy for a Whole-time ASSISTANT PSYCHIATRIST at Leybourne Grange Colony, West Malling, Kent, which is an establishment for the training of mental defectives. Candidates must have had wide experience in psychiatry and previous mental defective experience ; possession of a higher qualification is desirable. Salary within the scale £1300–£50–£1750. An unfurnished house will be available.

Apply, stating nationality, age, sex, qualifications and experience, including details of present appointment and of war service, together with the names and addresses of 3 referees, to the Secretary, Advisory Appointments Committee, South East Metropolitan Regional Hospital Board, 11, Portland-place, W.1. The last day for acceptance of applications will be **31st** January, 1953.

WELSH REGIONAL HOSPITAL BOARD. Applications are invited from registered medical practitioners for the appointment of a CONSULTANT ANÆSTHETIST to serve the Rhymney and Sirhowy Valleys Hospital Management Committee. The successful candidate, who will work mainly at the Caerphilly Miners' Hospital, will be required to reside within the Area, and will also be expected to serve other hospitals in this and neighbouring Groups. Candidates must be in possession of the D.A. and have had wide experience in the specialty. The successful candidate will be asked to state whether he wishes to hold a whole-time or maximum part-time appointment.

Applications (12 copies), stating date of birth, giving details of qualifications, experience, previous appointments with dates, and publications, together with the names of 3 referees, should be addressed to the Senior Administrative Medical Officer, Welsh Regional Hospital Board, Cathays Park, **Cardiff**, within 21 days of appearance of this advertisement.

WEST CORNWALL CLINICAL AREA. South-Western REGIONAL HOSPITAL BOARD. Applications are invited from registered medical practitioners for the appointment of RESIDENT PHYSICIAN at Tehidy Chest Hospital, Camborne, Cornwall, which contains approximately 189 Beds, and where it is proposed to establish a Thoracic Surgery Unit. The appointment will be on a whole-time basis in the Senior Hospital Medical Officer grade. Applicants should possess high medical qualifications, and previous experience in diseases of the chest is essential. The successful candidate will be required to work under the general supervision of the Senior Consultant Chest Physician, and will be assigned chest clinic as well as inpatient duties. A 6-roomed house in the grounds of the Hospital will be available for the use of the successful candidate.

Applications (12 copies), stating date of birth, qualifications and experience, together with 12 copies of 2 testimonials, and the names and addresses of 2 referees, should be sent to the Secretary of the Regional Hospital Board, 27, Tyndalls Park-road, Bristol, 8, not later than 2nd February, 1953.

NORTHERN IRELAND HOSPITALS AUTHORITY invite applications for a whole-time appointment as CONSULTANT E.N.T. SURGEON to the Robinson Memorial Hospital, Ballymoney, the Dalriada Hospital, Ballycastle, and the Mid-Ulster Hospital, Magherafelt. The terms, conditions of service, and remuneration for the post will be in accordance with the Authority's application of the Spens Report to Northern Ireland.

Applications should be made on a form which may be obtained from the Secretary, Northern Ireland Hospitals Authority, Friends' Provident Building, 58, Howard-street, Belfast, and which must be returned to him so as to be received not later than 31st January, 1953.

NORTHERN IRELAND HOSPITALS AUTHORITY invite applications for a part-time post as ANÆSTHETIST to the Belfast City Hospital, Musgrave Park Hospital and the Samaritan Hospital. The terms and conditions of the appointment will be in accordance with the Authority's application to Northern Ireland of the Spens report.

Applications should be made on a form which may be obtained (with further particulars) from the Secretary, Northern Ireland Hospitals Authority, Friends' Provident Building, 58, Howard-street, Belfast, which must be returned to him so as to be received not later than 31st January, 1953.

Hospital Services : Junior Appointments

ANNIE McCALL MATERNITY HOSPITAL, Jeffreys-road, S.W.4. Applications are invited from registered medical practitioners for the resident post of OBSTETRIC HOUSE SURGEON at the above Hospital. This post is vacant on 1st April, 1953, and is recognised for the D.Obst.R.C.O.G.

Applications, stating age, qualifications with dates, and nationality, accompanied by copies of 3 recent testimonials, should be sent to the Secretary, Lambeth Group Hospital Management Committee, Renfrew-road, S.E.11.

BATTERSEA GENERAL HOSPITAL, Battersea Park, S.W.11. CASUALTY OFFICER/HOUSE SURGEON (resident) House Officer grade.

Apply, enclosing copies of 2 recent testimonials, to Hospital Secretary.

CENTRAL MIDDLESEX HOSPITAL, Park Royal, N.W.10. RESIDENT HOUSE OFFICER required in Surgical Department. Appointment for 6 months from 1st March.

Applications, with copies of 2 testimonials, to Medical Director by 24th January.

CONNAUGHT HOSPITAL, Walthamstow, E.17. (118 Beds.) Applications are invited for the post of RESIDENT ANÆSTHETIST graded as Senior House Officer, vacant immediately. Salary £670 p.a., less £120 p.a. for board, lodging, &c. Recognised for the D.A.

Applications, stating age, qualifications and experience, together with copies of 2 recent testimonials, should be sent immediately to the Secretary, Hospital Management Committee, Forest Group, Langthorne-road, E.11.

DULWICH HOSPITAL, East Dulwich-grove, London, S.E.22. CAMBERWELL HOSPITALS MANAGEMENT COMMITTEE. Applications invited for appointment as HOUSE OFFICER (general surgical duties). Resident post, vacant from 11th February, 1953.

Applications, stating age, details of qualifications and experience, enclosing copy testimonials or names of referees, to the Secretary, Camberwell Hospitals Management Committee, Dulwich Hospital, East Dulwich-grove, S.E.22.

HACKNEY HOSPITAL, E.9. (811 Beds.) Applications are invited for OBSTETRIC HOUSE SURGEONS (second or third post). Appointments vacant on 17th February and 1st April. Posts recognised for M.R.C.O.G.

Applications, with copies of 3 testimonials, to the Secretary, Hackney Group Hospital Management Committee, Hackney Hospital, E.9, by 26th January.

LAMBETH HOSPITAL, Brook-drive, S.E.11. Applications are invited from pre-registration and registered medical practitioners for the positions of RESIDENT HOUSE SURGEONS (2). The appointments are for 6 months commencing on 11th February, 1953. The appointments are recognised for the F.R.C.S.

Forms of application may be obtained from the Physician-Superintendent at the Hospital.

LONDON JEWISH HOSPITAL, Stepney Green, E.1. Application invited for the post of RESIDENT HOUSE PHYSICIAN, vacant 10th February, 1953. Tenable for 6 months—renewable. Salary £350, £400, or £450 p.a., according to experience, subject to deduction at the rate of £100 p.a. for board, lodging, &c.

Applications, with copies of testimonials, to the Secretary at the Hospital.

GUY'S HOSPITAL. York Clinic for Psychological MEDICINE. Required, RESIDENT HOUSE PHYSICIAN (Male) to commence duties on 1st March. 1953. The post offers good opportunities for postgraduate study. Salary in accordance with the terms and conditions of service for House Officers in the National Health Service. Appointment for 6 months in the first instance and may be renewed for further such periods.

Applications, with copies of 2 testimonials, should be sent to the Superintendent, Guy's Hospital, London Bridge, S.E.1, on or before 6th February, 1953.

NATIONAL HOSPITALS FOR NERVOUS DISEASES. Applications are invited from registered medical practitioners for the appointment of SURGICAL REGISTRAR at The National Hospital, Queen-square, W.C.1, to commence on 1st April, 1953. This post carries the grade of Senior Registrar. The appointment will be for 1 year in the first instance.

Applications, with names of 3 referees, to be sent to the undersigned not later than 21st February, 1953.

H. EWART MITCHELL, Secretary.

The National Hospital, Queen-square, W.C.1.

NORTH MIDDLESEX HOSPITAL, Edmonton, N.18. Applications are invited for the post of HOUSE PHYSICIAN (resident). 6 months appointment, vacant 1st March, 1953.

Applications, stating age, qualifications, experience, nationality, with copies of recent testimonials, to Secretary of Hospital by 26th January.

NORTH MIDDLESEX HOSPITAL, Edmonton, N.18. SENIOR HOUSE SURGEON (resident). General surgery, trauma and orthopædics. Salary £670 p.a., less £130 p.a. for residence. Vacant 1st March, 1953.

Applications, stating age, qualifications, experience, nationality, with copies of recent testimonials, to Secretary of Hospital by 26th January.

NORTH MIDDLESEX HOSPITAL, Edmonton, N.18. Applications are invited for the post of HOUSE SURGEON (resident). General, traumatic, and orthopædic surgery. 6 months appointment, vacant 1st March, 1953.

Applications, stating age, qualifications, experience, nationality, together with copies of recent testimonials, to Secretary of Hospital by 26th January.

NORTH MIDDLESEX HOSPITAL, Edmonton, N.18 EDMONTON GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of RESIDENT HOUSE ANÆSTHETIST. Recognised for D.A. examination. Whole-time duties under supervision of Senior Anæsthetists. Candidates must have held at least 1 house appointment. Salary £400 or £450 p.a. according to experience, less £100 p.a. for residence. Appointment for 6 months in first instance, with possible extension to 1 year. Vacant 1st March, 1953.

Application, stating age, nationality, qualifications, experience, with copies of recent testimonials, to Secretary of Hospital by 26th January.

NORTH MIDDLESEX HOSPITAL, Edmonton, N.18. EDMONTON GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of CASUALTY OFFICER (Senior House Officer). Non-resident: hours 9 A.M.–5 P.M. daily, 1 P.M. Saturday, no Sunday duty. Duties mainly surgical casualties (including fractures) and outpatients. Over 2500 minor operations a year. Vacant 1st March, 1953. 6 months appointment with possible extension to 1 year.

Application, stating age, qualifications, experience, nationality, with copies of recent testimonials, to Secretary of Hospital by 26th January.

PLAISTOW HOSPITAL, Samson-street, London, E.13. (179 Beds.) Applications are invited for the appointment of RESIDENT HOUSE PHYSICIAN (House Officer—second or third post) for 6 months, commencing 1st March, 1953, in the Chest Unit and Infectious Diseases Unit at this Hospital. The position offers valuable experience in both groups of diseases and is particularly useful to candidates sitting for the M.R.C.P. examination.

Candidates should send applications to the undersigned, together with copies of recent testimonials, by 31st January, 1953.

M. J. HUNTLEY, Group Secretary,
West Ham Group Hospital Management Committee.
Stratford, London, E.15.

QUEEN MARY'S (Roehampton) HOSPITAL, S.W.15. (562 Beds.) MINISTRY OF PENSIONS. Applications are invited for the position of REGISTRAR in Radiology at this Hospital. Salary at the usual rate of £775 for the first year, £850 second year, with deductions for residential emoluments of £130 and £140 a year, respectively.

An application form will be provided on request to the Director-General of Medical Services (M.S.2), Ministry of Pensions, Norcross, Blackpool, Lancashire.

QUEEN MARY'S HOSPITAL FOR THE EAST END, Stratford, London, E.15. Applications are invited for the appointment of a HOUSE SURGEON (House Officer—first, second, or third post) for 6 months commencing as soon as possible.

Applications, stating age, and experience, together with copies of testimonials, should be sent to the undersigned by 24th January, 1953.

M. J. HUNTLEY, Group Secretary,
West Ham Group Hospital Management Committee.
Stratford, London, E.15.

ROYAL CANCER HOSPITAL, Fulham-road, London, S.W.3. Applications are invited for the post of Whole-time or maximum Part-time SURGICAL REGISTRAR (Registrar grade), to commence duties as soon after 12th February as possible. The successful candidate will be required to work in the Records Department in addition to undertaking clinical duties.

Forms of application are obtainable from the House Governor, to whom applications (together with copies of 3 recent testimonials) should be sent not later than 26th January, 1953.

ROYAL EYE HOSPITAL, King's College Hospital Group. Applications are invited for the post of HOUSE SURGEON (third or subsequent post) from 1st March, 1953. Salary in accordance with terms and conditions of service for medical staff.

Applications, with copies of recent testimonials, should be made to the Secretary, The Royal Eye Hospital, St. George's Circus, S.E.1, by 6th February, 1953.

ROYAL NATIONAL THROAT, NOSE AND EAR HOSPITAL, Gray's Inn-road, London, W.C.1, and Golden-square, W.1. ASSISTANTS in the Outpatient Department. Applications are invited for 2 of the above posts which are for initial periods of 6 months and for attendance at 2 sessions weekly. They afford good opportunities for acquiring clinical experience in the specialty and are intended for senior postgraduate students. Salary according to the terms and conditions of service for hospital medical staff (paragraph 10b).

Applications, giving details of qualifications and experience, should be sent to the House Governor immediately.

SOUTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for an appointment as Whole-time REGISTRAR in Orthopædic Surgery to fill a vacancy in the approved trainee establishment at the Lewisham Group of hospitals. The appointment will be in accordance with the terms and conditions of service of hospital medical and dental staffs (England and Wales), and will be for 1 year in the first instance.

Applications, giving particulars of age, qualifications and experience, with relevant dates, together with the names and addresses of 2 referees, to be sent to the Secretary, Registrars Committee, South East Metropolitan Regional Hospital Board, 11, Portland-place, W.1, not later than 31st January, 1953.

SOUTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for an appointment as Whole-time REGISTRAR in Orthopædic Surgery to fill a vacancy in the approved trainee establishment at the Seamen's Group of hospitals. The duties are principally at the Albert Dock Hospital, E.16, where the successful candidate must reside. Married quarters are available. The appointment will be in accordance with the terms and conditions of service of hospital medical and dental staffs (England and Wales), and will be for 1 year in the first instance.

Applications, giving particulars of age, qualifications and experience, with relevant dates, together with the names and addresses of 2 referees, to be sent to the Secretary, Registrars Committee, South East Metropolitan Regional Hospital Board, 11, Portland-place, W.1, not later than 31st January, 1953.

ST. ANDREW'S HOSPITAL, Bow, E.3. Applications are invited from registered medical practitioners for the post of HOUSE SURGEON to the Obstetric and Gynæcological Department from 18th January. Post tenable for 6 months.

Applications, stating age, and qualifications, should be sent immediately to the Medical Superintendent, St. Andrew's Hospital, Bow, E.3.

ST. BARTHOLOMEW'S HOSPITAL, E.C.1. Applications are invited for the post of SENIOR REGISTRAR in the Department of Radiotherapy, to commence on 1st May, 1953, for 1 year in the first instance with eligibility for annual re-election.

Applications, with the names of 3 referees, should be submitted to the undersigned by 18th February, 1953.

C. C. CARUS-WILSON, Clerk to the Governors.

ST. GEORGE-IN-THE-EAST HOSPITAL, Raine-street, Wapping, E.1. Applications are invited for the post of HOUSE SURGEON (House Officer, first, second, or third), required immediately. Tenable for 6 months. Salary, &c., in accordance with national scale.

Applications, stating age, qualifications and experience, together with copies of 3 testimonials, to be forwarded to the Medical Superintendent.

ST. THOMAS'S HOSPITAL, London, S.E.1. Junior OBSTETRIC HOUSE PHYSICIAN at the General Lying-in Hospital, York-road, S.E.1, from 17th March, 1953, for 6 months. Approved service for M.R.C.O.G.

Applications, including the names and addresses of 3 referees, to the Clerk of the Governors, by 31st January, 1953.

ST. THOMAS'S HOSPITAL, London, S.E.1. Senior MEDICAL REGISTRAR from 15th February, 1953, for 1 year in the first instance.

Applications, including names and addresses of 2 referees, to the Clerk of the Governors by 27th January, 1953.

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN, Lisle-street, Leicester-square, W.C.2. Applications are invited for the post of RESIDENT SENIOR HOUSE OFFICER.

Inquiries or applications, with names of 2 referees, before 31st January to the Secretary.

ST. JAMES' HOSPITAL, Ouseley-road, Balham, S.W.12. SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. Applications are invited for the post of REGISTRAR in the Physical Medicine Department of the above Hospital.

Application forms (send stamped addressed foolscap envelope) obtainable from the Group Secretary, Wandsworth Hospital Group, 14, Atkins-road, Balham, S.W.12, to be completed and returned by 27th January, 1953.

ST. JAMES' HOSPITAL, Ouseley-road, Balham, S.W.12. HOUSE PHYSICIAN required. Post vacant 1st February, 1953. Preference for pre-registration Medical Officer.

Applications, giving age, qualifications, experience, and names of 2 referees, to Group Secretary, Wandsworth Hospital Group, 14, Atkins-road, Balham, S.W.12, by 23rd January, 1953.

ST. JAMES' HOSPITAL, Ouseley-road, Balham, S.W.12. Locum SENIOR HOUSE OFFICER required in Anæsthetics Department.

Applications, stating age, qualifications, experience, and names of 2 referees, to Group Secretary, Wandsworth Hospital Group, 14, Atkins-road, Balham, S.W.12, by 22nd January, 1953.

ST. JAMES' HOSPITAL, Ouseley-road, Balham, S.W.12. SENIOR HOUSE OFFICER required in Anæsthetics Department.

Applications, stating age, qualifications, experience, and names of 2 referees, to Group Secretary, Wandsworth Hospital Group, 14, Atkins-road, Balham, S.W.12, by 22nd January, 1953.

ST. NICHOLAS HOSPITAL, Tewson-road, Plumstead, S.E.18. HOUSE PHYSICIAN, vacant 1st February. 6 months appointment. Salary £350–£450 p.a., less £100 p.a. for residence.

Apply to Group Secretary, Memorial Hospital, Woolwich, S.E.18.

UNIVERSITY COLLEGE HOSPITAL, Gower-street, W.C.1. Applications are invited for the post of REGISTRAR in the Pædiatric Department for 1 year in the first instance. Applicants should have held at least 1 pædiatric appointment.

Applications, with the names of 2 referees, to the Administrator and Secretary by 27th January, 1953.

WANSTEAD HOSPITAL, Hermon Hill, E.11. (191 Beds.) Applications are invited for the post of CASUALTY OFFICER (graded as Senior House Officer), vacant early January. Salary £670 p.a. with a deduction of £120 p.a. for board, lodging, &c.

Applications, giving full particulars, together with copies of 2 recent testimonials, should be sent immediately to the Secretary, Forest Group Hospital Management Committee, Langthorne-road, E.11.

WESTMINSTER HOSPITAL, St. John's-gardens, S.W.1 Applications invited for post of SENIOR HOUSE OFFICER to Department of Clinical Pathology for 1 year starting 11th February. Post is non-resident for 6 months and resident for last 6 months.

Applications (10 copies), with names of 2 referees, to House Governor by 23rd January.

ASHFORD HOSPITAL, Ashford, Kent. Applications are invited from medical practitioners for the post of RESIDENT HOUSE PHYSICIAN at the above Hospital. The appointment will become vacant on 1st February, 1953. Salary, £350, £400, or £450 a year according to experience. A deduction of £100 a year will be made in respect of residential emoluments.

Applications, stating age, qualifications, and the names and addresses of 2 referees, to the Group Secretary, South East Kent Hospital Management Committee, "Ash-Eton," Radnor Park West, Folkestone.

ASHFORD HOSPITAL, Ashford, Middlesex. North West METROPOLITAN REGIONAL HOSPITAL BOARD. 2 SURGICAL REGISTRARS (non-resident) required at above Hospital. (*a*) General Surgery; (*b*) General Surgery plus some E.N.T. Posts vacant not later than 1st April, 1953. Hospital may be visited by direct appointment with the Medical Director.

Application forms obtainable from, and returnable to, Secretary, Staines Group Hospital Management Committee, Ashford Hospital, Ashford, Middlesex, by 27th January, 1953.

ASHFORD HOSPITAL, Ashford, Middlesex. Staines GROUP HOSPITAL MANAGEMENT COMMITTEE. 2 RESIDENT HOUSE SURGEONS (Male) required at above Hospital for general surgical duties. 6 months appointments, 1 post commencing 1st February, second post commencing 7th February. Preference given to pre-registration candidates. National Health Service salary and conditions of service.

Applications, stating age, qualifications, and experience, with copies of up to 3 recent testimonials, to Medical Director of Hospital by 24th January.

ASHTON, HYDE, AND GLOSSOP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the following appointments:—

Ashton-under-Lyne General Hospital (800 Beds)

HOUSE SURGEON (general surgery), vacant now. Post recognised for F.R.C.S. (Eng.).

E.N.T. SURGEON (Senior House Officer grade), vacant now.

Manchester Regional Hospital Board

ORTHOPÆDIC REGISTRAR, vacant now.

Appointments are subject to Ministry of Health terms and conditions of service.

Applications, giving age, nationality, qualifications and experience, with copies of 3 testimonials, should be forwarded to R. W. MCVITY, Group Secretary.

Astley-road, Stalybridge, Cheshire.

AYLESBURY. ROYAL BUCKINGHAMSHIRE HOSPITAL. HOUSE SURGEON for Accident and Orthopædic Department, which is centred on this Hospital and comprises 40 Beds. Vacant now.

Applications, with 2 testimonials, to Secretary-Superintendent as soon as possible.

AYLESBURY. TINDAL GENERAL HOSPITAL. (276 Beds.) HOUSE PHYSICIAN (Chest Unit). Second or third post. Male or Female. Vacant 1st March, 1953. Duties include care of about 20 chest cases (including T.B. chalets) which may increase in due course; 4 Chest Clinics weekly and a Geriatric Unit. Further details on request.

Apply with 2 testimonials to Administrative Officer by 26th January.

AYRSHIRE. BALLOCHMYLE HOSPITAL. (General Hospital—388 Beds.) Applications are invited for the appointment of JUNIOR HOSPITAL MEDICAL OFFICER (anæsthetics), now vacant. The Hospital is recognised for the D.A.

Applications, stating age, nationality, qualifications and experience with dates, together with the names and addresses of 2 referees, to be sent to the undersigned immediately.

Dr. G. H. SCOULAR, Area Medical Superintendent.

Ballochmyle Hospital, Mauchline.

BEDFORD GENERAL HOSPITAL. (434 Beds.) North WEST METROPOLITAN REGIONAL HOSPITAL BOARD. MEDICAL REGISTRAR (resident) required at the above Hospital. Hospital may be visited by direct appointment.

Application forms obtainable from, and returnable to, Group Secretary, Bedford Group Hospital Management Committee, 3, Kimbolton-road, Bedford, by 23rd January, 1953.

BARNET GENERAL HOSPITAL, Wellhouse-lane, Barnet, HERTS. (478 Beds.) RESIDENT HOUSE PHYSICIAN (second or third appointment) required for the Department of Medicine and Pædiatrics. Post vacant 1st February and tenable for 6 months.

Applications, stating age, qualifications and experience, with copies of 2 recent testimonials, to be sent to the Hospital Secretary.

BARNET GENERAL HOSPITAL, Wellhouse-lane, Barnet, HERTS. NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. Whole-time RESIDENT OBSTETRICAL AND GYNÆCOLOGICAL REGISTRAR required at above Hospital. The successful candidate will also have duties at the Victoria Maternity Hospital, Barnet. Hospital recognised for D.Obst.R.C.O.G. and M.R.C.O.G. and may be visited by direct appointment.

Application forms obtainable from, and returnable to, Group Secretary, Barnet Group Hospital Management Committee, Wellhouse-lane, Barnet, Herts, by 29th January, 1953.

BARNET GENERAL HOSPITAL, Barnet, Herts. Resident HOUSE SURGEON (general surgery). Post vacant early February. Preference will be given to persons seeking pre-registration posts under the Medical Act, 1950.

Applications, with copies of 2 recent testimonials, to be sent to the Hospital Secretary as soon as possible.

BATH. ROYAL UNITED HOSPITAL. Applications are invited from registered medical practitioners for the post of HOUSE PHYSICIAN.

Applications, stating age, qualifications and experience, with copies of 3 recent testimonials, should be forwarded to—

J. LAWRENCE MEARS, Secretary,
Bath Hospital Management Committee.
Manor Hospital, Combe Park, Bath.

BATH. ROYAL UNITED HOSPITAL. Applications are invited from registered medical practitioners for the post of HOUSE PHYSICIAN (pædiatrics).

Applications, stating age, qualifications and experience, with copies of 3 recent testimonials, should be forwarded to—

J. LAWRENCE MEARS, Secretary,
Bath Hospital Management Committee.
Manor Hospital, Combe Park, Bath.

BEBINGTON, CHESHIRE. CLATTERBRIDGE HOSPITAL. (692 Beds.) CENTRAL WIRRAL GROUP.

HOUSE OFFICER (general surgery—1 vacancy).
HOUSE OFFICER (general medicine—4 vacancies).
HOUSE OFFICER (pædiatrics—1 vacancy).

Salary in accordance with current terms and conditions of service. 6 months appointment commencing 1st April, 1953.

Application forms from Group Secretary, to be returned by 2nd February, 1953.

BISHOP AUCKLAND GENERAL HOSPITAL. (350 Beds.) SOUTH WEST DURHAM HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of HOUSE SURGEON (obstetrics and gynæcology) available 1st March; departmental beddage 66; Hospital recognised for D.Obst.R.C.O.G. Salary £350–£450 p.a., according to previous posts held, less £100 p.a. for full residential emoluments.

Applications, stating age, nationality, qualifications and experience, to be sent with names of 2 referees, to the undersigned as soon as possible.

K. G. T. LUXFORD, Secretary/Finance Officer.
General Hospital, Bishop Auckland.

BISHOP'S STORTFORD, HERTFORDSHIRE. HAYMEADS HOSPITAL. (350 occupied beds. Midway between London and Cambridge. Main Line Railway from Liverpool Street.) Applications are invited from registered medical practitioners for a RESIDENT HOUSE OFFICER (surgical), first or second post held. Salary £350–£400 p.a., plus special grant of £50 p.a., less £100 p.a. for residential emoluments. Appointment to commence as soon as possible.

Applications, stating age, nationality, qualifications, and experience, with copies of recent testimonials or the names of referees, should be sent, as soon as possible to the Administrative Officer.

BIRMINGHAM ACCIDENT HOSPITAL, Bath-row, BIRMINGHAM, 15. (215 Beds.) Applications are invited from registered medical practitioners (Male and Female) for the posts of HOUSE SURGEONS (3) vacant 1st March, 1953. The appointments will be for a period of 6 months, of which 2 may be spent in the Burns Unit (Medical Research Council). The Hospital is the largest Traumatic Unit in the country and treats 50,000 new patients each year. The posts offer ample opportunity for practical experience in the management of all types of injury and teaching by the Consultant Staff: are recognised for the F.R.C.S.

Applications, accompanied by copies of recent testimonials or names of 2 referees, to the Administrator.

BIRMINGHAM. SOLIHULL HOSPITAL, Lode-lane, SOLIHULL. RESIDENT SURGICAL OFFICER (Senior House Officer). Post vacant immediately. Good experience in general surgery and 5 other resident medical staff.

Applications, stating age, nationality, qualifications and experience, together with copies of testimonials or names of referees, to the Medical Superintendent.

BIRMINGHAM, 31. HOLLYMOOR MENTAL HOSPITAL, NORTHFIELD. (640 Beds.) Applications are invited for the post of SENIOR HOUSE OFFICER (Male or Female), resident or non-resident. Duties to commence as soon as possible. Excellent experience provided in the diagnosis and treatment of psychiatric and psychoneurotic reactions. Salary in accordance with the National Health Service terms and conditions of service.

Applications, stating name, age, nationality, qualifications, and experience, and providing the names and addresses of 3 referees, to be sent as soon as possible to the Secretary, No. 6 Group Hospital Management Committee Offices, Rubery Hill Hospital, Birmingham.

BIRMINGHAM. THE UNITED BIRMINGHAM HOSPITALS. THE BIRMINGHAM AND MIDLAND HOSPITAL FOR WOMEN, Showell Green-lane, SPARKHILL, BIRMINGHAM, 11. 2 GYNÆCOLOGICAL HOUSE SURGEONS required—1 for duty with Professorial Unit. The appointment is for a period of 6 months and is recognised for the M.R.C.O.G. Duties commence 1st April, 1953.

Application forms can be obtained from the House Governor at the above address, and should be returned not later than 31st January, 1953. G. A. PHALP, Secretary,
The United Birmingham Hospitals.

BIRMINGHAM, 18. DUDLEY ROAD HOSPITAL. (900 Beds.) HOUSE SURGEON required in the Ear and Throat Department (vacant immediately) which has 50 Beds. Post recognised for the D.L.O.

Applications, stating age, nationality, and qualifications, together with copies of recent testimonials, to the Secretary.

BIRMINGHAM. YARDLEY GREEN HOSPITAL. THORACIC SURGICAL UNIT, BIRMINGHAM (SANATORIA) GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER. The appointment will give broad opportunities for experience in both tuberculous and non-tuberculous thoracic surgery. The post will be paid in accordance with the appropriate salary, and is now vacant.

Applications, stating age, qualifications, training and experience, together with copies of 3 recent testimonials, should be addressed to the Secretary, Birmingham (Sanatoria) Group Hospital Management Committee, Yardley Green Hospital, Birmingham, 9.

BIRMINGHAM REGIONAL HOSPITAL BOARD. Applications invited for appointment of SENIOR REGISTRAR (medical), Yardley Green Hospital, Birmingham (359 Beds for the treatment of pulmonary tuberculosis and 54 Beds in Thoracic Surgical Department). Duties in Hospital and at Central Chest Clinic in Birmingham. Higher medical qualification desirable with experience in chest diseases and tuberculosis. The successful candidate may subsequently be required to spend not more than 2 years in a selected hospital of the United Birmingham Hospitals, in accordance with the arrangements for the interchange of Registrars agreed between the 2 Boards.

Application forms from Secretary, 10, Augustus-road, Birmingham, 15, to be returned before 2nd February, 1953.

BIRMINGHAM REGIONAL HOSPITAL BOARD. Applications invited for appointment of Whole-time REGISTRAR in Pathology, Birmingham (Selly Oak) Group. Duties at Selly Oak Hospital (1098 Beds). Resident appointment. Post offers wide experience in all branches of pathology.

Application forms from Secretary, 10, Augustus-road, Birmingham, 15, to be returned before 2nd February, 1953.

BIRMINGHAM, 29. SELLY OAK HOSPITAL. (1098 Beds.) SENIOR HOUSE OFFICER (anæsthetics), resident or non-resident. This post offers exceptional opportunities for reading for higher qualifications.

Apply to Medical Superintendent, giving details of qualifications, age and experience, with copies of 3 recent testimonials.

BIRMINGHAM. SORRENTO AND LORDSWOOD MATERNITY HOSPITALS. OBSTETRIC HOUSE SURGEON. Recognised for the D.Obst.R.C.O.G. Sorrento is recognised by Birmingham University for the training of medical students in practical midwifery. Appointment becomes vacant on 1st March.

Applications should be sent to the Obstetrician, Sorrento Maternity Hospital, Birmingham, 13, not later than 28th January, 1953.

BLACKPOOL. VICTORIA HOSPITAL. (347 Beds.) HOUSE OFFICER (Eye and E.N.T. Department). This post is recognised for the D.L.O. and D.O.M.S. This is a busy General Hospital with a large Outpatient Department, and the post offers excellent opportunities for experience under Consultant Ophthalmic and Aural Surgeons. Pre-registration post under Medical Act, 1950. Salary and conditions of service in accordance with national scale.

Applications with references, should be sent to the Hospital Secretary, Victoria Hospital, Blackpool.

BLACKPOOL. VICTORIA HOSPITAL. (347 Beds.) SENIOR HOUSE OFFICER (Department of Ophthalmology). Recognised for the F.R.C.S. and D.O.M.S. This is a busy General Hospital with a large Outpatient Department, and the post offers excellent opportunities for experience under a Consultant Ophthalmologist. Salary and conditions of service in accordance with national scale.

Applications, with references, should be sent to the Hospital Secretary, Victoria Hospital, Blackpool.

WALTER R. SMITH, Group Secretary.

BOURNEMOUTH. ROYAL VICTORIA HOSPITAL. (492 Beds.) BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. ORTHOPÆDIC SENIOR HOUSE OFFICER (resident). The post is recognised for the F.R.C.S. examination and applicants must have been registered for at least 12 months. The post is tenable for 12 months.

Applications to the Deputy Hospital Secretary of the Hospital.

BOURNEMOUTH. ROYAL VICTORIA HOSPITAL. (492 Beds.) BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointments (recognised for the F.R.C.S.) of 2 HOUSE SURGEONS for mid-January, 1953. These will eventually be reserved for pre-registration Interns, and applications submitted from persons in this category will be considered.

Applications to the Deputy Hospital Secretary of the Hospital.

BOURNEMOUTH. ROYAL VICTORIA HOSPITAL. BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. ANÆSTHETIST (Senior House Officer) required immediately. The post is recognised for the D.A. and is tenable for 12 months. Salary £670 p.a.

Applications to the Deputy Hospital Secretary at the Hospital.

BOURNEMOUTH, HANTS. CHRISTCHURCH HOSPITAL. BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for 2 HOUSE PHYSICIAN appointments becoming vacant in January and February, 1953. There are 60 acute medical beds, 196 semi-acute and chronic sick beds and 34 pædiatric beds. The successful applicants will have to assist in the Outpatient Department at the Royal Victoria Hospital, Bournemouth.

Applications to the Group Secretary, Hospital Management Committee Office, Royal Victoria Hospital, Bournemouth.

BLACKBURN. ROYAL INFIRMARY. (244 Beds.) SENIOR HOUSE OFFICER (E.N.T.) required for duties mainly at the Royal Infirmary. Post recognised for F.R.C.S. National Health Service salary and conditions of service.

Applications should be sent to the Secretary, Hospital Management Committee Office, Royal Infirmary, Blackburn.

BLACKBURN. ROYAL INFIRMARY. (244 Beds.) HOUSE SURGEON required to take up duty 14th February, 1953. Approved pre-registration post and recognised for F.R.C.S. National Health Service salary and conditions of service.

Applications should be sent to the Secretary, Hospital Management Committee Office, Royal Infirmary, Blackburn.

BLACKBURN. QUEEN'S PARK HOSPITAL. (650 Beds.) MANCHESTER REGIONAL HOSPITAL BOARD. Applications are invited for the post of RESIDENT REGISTRAR in Obstetrics and Gynæcology with duties mainly at Queen's Park Hospital (58 obstetric and 27 gynæcological beds) recognised for D.Obst.R.C.O.G. and M.R.C.O.G. The appointment is for 1 year from 1st March, 1953, in the first instance and the successful candidate would be required to undertake occasional duties in other hospitals and maternity homes of the Group.

Applications on forms to be obtained from, and returned to, the Secretary, Blackburn and District Hospital Management Committee, Royal Infirmary, Blackburn.

BRADFORD ROYAL INFIRMARY. House Surgeon or SENIOR HOUSE SURGEON (general and urology), vacant 1st March, 1953. Salary £350–£450 p.a., less £100 p.a. residential emoluments, or £670 p.a., less £130 p.a. residential emoluments.

Applications, stating age, nationality, qualifications and experience, with copy testimonials, to Secretary.

BRADFORD. ST. LUKE'S HOSPITAL.

HOUSE OFFICER (anæsthetics), vacant now.

ORTHOPÆDIC HOUSE SURGEON/CASUALTY OFFICER, vacant now. Recognised for F.R.C.S.

Salary for above posts £350–£450 p.a., less £100 p.a. residential emoluments.

Applications, stating age, nationality, qualifications, and experience, with copy testimonials, to Secretary, Bradford Royal Infirmary.

BRADFORD. ST. LUKE'S HOSPITAL.

Locum HOUSE SURGEON (general), 4th March–31st July, 1953. Recognised for F.R.C.S.

Locum HOUSE OFFICER (medicine and dermatology), 1st March–31st July, 1953.

Salary for both posts £8 per week less residential emoluments at the rate of £100 p.a.

Applications, stating age, nationality, qualifications and experience, with copy testimonials, to Secretary, Bradford Royal Infirmary.

BRAINTREE, ESSEX. BLACK NOTLEY HOSPITAL. Applications invited for post of HOUSE OFFICER (orthopædic surgery—first, second, or third post). Post tenable for 6 months and is recognised under F.R.C.S. regulations. Salary in accordance with the terms of service issued by the Ministry of Health, plus £50 p.a.

Applications, with copies of 3 testimonials, should be forwarded to the Secretary, Colchester Group Hospital Management Committee, 14, Pope's-lane, Colchester, Essex.

BRAINTREE, ESSEX. BLACK NOTLEY HOSPITAL. (550 Beds.) Applications invited for post of SENIOR HOUSE OFFICER (anæsthetics). Post tenable for 1 year. The successful candidate may occasionally be called upon to give anæsthetics in other hospitals in the Group. Salary in accordance with the terms of service issued by the Ministry of Health.

Applications, with copies of 3 testimonials, should be forwarded to the Secretary, Colchester Group Hospital Management Committee, 14, Pope's-lane, Colchester, Essex.

BRAINTREE, ESSEX. BLACK NOTLEY HOSPITAL. (550 Beds.) Applications invited for post of HOUSE SURGEON (first, second, or third post); tenable for 6 months. Duties to include work in general surgical and gynæcological wards. Salary in accordance with the terms of service issued by the Ministry of Health, plus £50 p.a. Recognised under F.R.C.S. regulations.

Applications, with copies of 3 recent testimonials, should be forwarded to the Secretary, Colchester Group Hospital Management Committee, 14, Pope's-lane, Colchester, Essex.

BRISTOL. COSSHAM/FRENCHAY HOSPITAL MANAGEMENT COMMITTEE. FRENCHAY HOSPITAL. (499 staffed beds, expanding.) Applications are invited for the post of SENIOR HOUSE OFFICER in the Regional Neurosurgery Department. Vacancy will occur about 1st February, 1953. This post offers useful surgical experience and the opportunity of gaining a working knowledge of neurological diagnosis.

Applications to the Secretary, Frenchay Hospital, quoting "N.S.F." 2 referees required.

BURTON-ON-TRENT GENERAL INFIRMARY. (240 acute beds.) Applications are invited for the following vacancies:—

RESIDENT HOUSE SURGEONS.

(1) General surgical duties.

(2) General Surgical and Gynæcological Units.

Both posts offer excellent experience.

Applications, giving full details of age, qualifications, experience, together with testimonials or names for reference, should be addressed to J. E. SMITH, Group Secretary.

BURTON-ON-TRENT GENERAL INFIRMARY. (240 acute beds.) RESIDENT SURGICAL OFFICER (Senior House Officer grading). Post now vacant. The Hospital is recognised for examination purposes by the Royal College of Surgeons and affords a first-class opportunity of gaining general experience in a busy Acute Surgical Unit.

Applications, giving full details of age, qualifications, experience, together with testimonials or names for reference, should be addressed to J. E. SMITH, Group Secretary.

BRIGHTON GENERAL HOSPITAL. House Surgeon (recognised for F.R.C.S.), at General Surgical Unit (60 Beds), vacant 28th February, 1953.

Applications, stating age, qualifications, and experience, with names of 2 referees, to Physician-Superintendent, Brighton General Hospital, Elm-grove, Brighton, 7.

BRIGHTON, 7. ROYAL SUSSEX COUNTY HOSPITAL. CASUALTY HOUSE SURGEON required (1 of 2—attached to the Orthopædic and Traumatic Unit), now vacant.

Applications, giving details of qualifications, age, and experience, together with the names and addresses of 2 referees, to be sent to the Administrative Officer as soon as possible.

BRIGHTON AND LEWES HOSPITAL MANAGEMENT COMMITTEE. 2 HOUSE SURGEONS for duties in the E.N.T. Department of the Group hospitals (78 Beds), vacant now. Recognised for F.R.C.S. and D.L.O.

Applications, with details of experience, &c., and names and addresses of 2 referees, to the Administrative Officer, Royal Sussex County Hospital, Brighton, 7, as soon as possible.

BRIGHTON. NEW SUSSEX HOSPITAL FOR WOMEN. Applications are invited from medical practitioners (Female) for the pre-registration appointment of HOUSE PHYSICIAN for a period of 6 months from mid-January, 1953.

Applications, stating age, nationality, qualifications, and experience, with names of 2 referees, to be submitted to the Administrative Officer as soon as possible.

BURY AND ROSSENDALE HOSPITAL MANAGEMENT COMMITTEE.

Bury General Hospital

SENIOR HOUSE OFFICER (orthopædics).

Applications are invited for the above post and should indicate age, nationality, qualifications, and experience, and should be sent to the undersigned as soon as possible.

RESIDENT CLINICAL PATHOLOGIST (Senior House Officer grade) with duties mainly at Bury General Hospital. The post tenable for 1 year, affords opportunities for gaining experience in all branches of pathology. Salary and conditions of service as Ministry of Health scale.

Applications, stating nationality, age, qualifications, and experience, along with names of 2 referees, should be forwarded immediately to the undersigned at Bury General Hospital, Walmersley-road, Bury, Lancs.

H. WILKINSON, Group Secretary.

Bury General Hospital, Bury, Lancs.

BURY ST. EDMUNDS. WEST SUFFOLK GENERAL HOSPITAL. (289 Beds.) Applications are invited for the post of HOUSE SURGEON for casualty and orthopædic duties. Post is recognised for F.R.C.S.

Full details to the Hospital Secretary.

CANTERBURY. KENT AND CANTERBURY HOSPITAL. (265 Beds.) E.N.T. AND EYE HOUSE SURGEON. The above post, which is recognised for the D.L.O. and D.O.M.S. examinations, is now vacant. National Health Service salary and conditions.

Applications to be addressed to the Hospital Secretary at the above Hospital.

CANTERBURY. KENT AND CANTERBURY HOSPITAL. (265 Beds). GENERAL SURGICAL AND UROLOGICAL HOUSE SURGEON. The above pre-registration post, which is recognised for the F.R.C.S. Diploma, is now vacant. National Health Service salary and conditions.

Applications to be addressed to the Hospital Secretary at the above Hospital.

CARLISLE. CUMBERLAND INFIRMARY. (322 Beds.) Applications are invited for the resident post of HOUSE OFFICER (orthopædic and fracture) for the 6 months commencing immediately.

Applications, giving the names of 2 referees, should be sent to the undersigned as soon as possible.

A. PICKERING, Group Secretary,
East Cumberland Hospital Management Committee.
Cumberland Infirmary, Carlisle.

CARMARTHEN. WEST WALES GENERAL HOSPITAL. (160 Beds.) RESIDENT HOUSE OFFICER (surgical—recognised by Royal College of Surgeons) required at the above Hospital. Full Consultant staff. Salary £350, £400, or £450 p.a. according to experience, less £100 for residence. 6 months appointment.

Applications stating age, nationality, qualifications and experience, with names of 3 referees, to the Group Secretary, West Wales Hospital Management Committee, Glangwili, Carmarthen.

CHERTSEY, SURREY. ST. PETER'S HOSPITAL. (Late Botleys Park War Hospital—430 Beds.) Required, SENIOR HOUSE OFFICER for the Gynæcological and Special (E.N.T., Eyes, &c.) Departments. Salary in accordance with terms and conditions of National Health Service. Hospital within easy reach of London.

Applications, together with testimonials or names of referees, should be sent to the Physician-Superintendent, quoting reference L.T., St. Peter's Hospital, as soon as possible.

CHESTERFIELD ROYAL HOSPITAL. Senior House OFFICER required in Accident and Orthopædic Department of the above Hospital. National salary and conditions.

Applications to— M. H. BOONE, Secretary,
Chesterfield Hospital Management Committee.

CHESTERFIELD ROYAL HOSPITAL. House Physician. (House Officer) required immediately. Pre-registration post. National salary and conditions.

Applications to M. H. BOONE, Secretary.

CHESTER. BARROWMORE HOSPITAL, Great Barrow, CHESTER. (205 Beds.) SENIOR HOUSE OFFICER (Male). Post vacant immediately. Salary £670, subject to deduction of £100 p.a. for residence. The Hospital is modern in all respects and contains Regional Thoracic Surgical Unit.

Apply immediately, sending 2 references or names of referees, to Secretary.

CHICHESTER GROUP HOSPITAL MANAGEMENT COMMITTEE. SOUTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. MEDICAL REGISTRAR (resident) required March, 1953, for duty primarily at Royal West Sussex Hospital, Chichester (202 Beds), with care, under 2 Consultant Physicians, of 55 adult medical and 10 children's beds, also assisting Dermatologist and Physical Medicine Physician. There is a House Physician. Appointment subject to current terms and conditions of service of hospital medical and dental staffs, also superannuation regulations. Salary £775 first year, £890 second, each less £150 p.a. for residence. Candidates may visit Hospital; canvassing will disqualify.

Forms, obtainable from Group Secretary at Hospital, to be submitted within 14 days.

COLCHESTER. ESSEX COUNTY HOSPITAL. (192 Beds.) Applications are invited for the post of CASUALTY OFFICER AND GYNÆCOLOGICAL HOUSE SURGEON; with certain duties in Radiotherapy Department. First, second, or third post; tenable for 6 months from 1st February. Salary in accordance with the terms of service issued by the Ministry of Health.

Applications, with copies of 3 recent testimonials, should be forwarded to the Secretary, Colchester Group Hospital Management Committee, 14, Pope's-lane, Colchester, Essex.

COLCHESTER. SEVERALLS HOSPITAL. Applications are invited for the post of SENIOR HOUSE OFFICER at the above Mental Hospital. Salary £670 p.a., less £120 for residential emoluments. There are excellent opportunities for up-to-date experience and postgraduate work in all branches of psychiatry, including treatment of neurosis. Opportunities will be given at the Hospital for clinical instruction for the D.P.M.

Applications, with particulars and copies of testimonials, or names of referees, to the Medical Superintendent, Severalls Hospital, Colchester, as soon as possible.

CORBRIDGE. DILSTON HALL MATERNITY HOSPITAL. (53 Beds.) A vacancy will occur on 13th February for a HOUSE OFFICER (obstetrics) at the above Hospital which is recognised by the Royal College of Obstetricians and Gynæcologists. Salary £350–£400–£450, according to experience, less £100 for residential emoluments.

Applications, with the names and addresses of referees, to be received by the undersigned as early as possible.

W. STOKELL, Group Secretary,
Hexham and District Hospital Management Committee.
General Hospital, Hexham, Northumberland.

DARTFORD HOSPITAL MANAGEMENT COMMITTEE.

HOUSE SURGEONS (general).

HOUSE OFFICER (general medicine), vacant 21st January, 1953.

HOUSE OFFICER (E.N.T. and ophthalmology), vacant 1st February, 1953.

HOUSE OFFICER (chest diseases), vacant 30th January, 1953.

Applications, stating age, qualifications, experience, nationality, and the names of 2 persons to whom reference may be made, to be sent to the Group Secretary, Dartford Hospital Management Committee, The Bow Arrow Hospital, Dartford, Kent.

DERBY. KINGSWAY HOSPITAL. Sheffield Regional HOSPITAL BOARD. Applications are invited from suitably qualified medical practitioners for the whole-time post of JUNIOR HOSPITAL MEDICAL OFFICER at the above Mental Hospital (730 Beds). Salary scale £700–£50–£1000 p.a. Residential accommodation available for a single person. The Hospital is situated near the town, has modern admission units, and all forms of psychiatric treatment are undertaken.

Applications, giving age, nationality, qualifications, present and previous appointments with dates, together with names and addresses of 3 referees, to be forwarded to the Group Secretary at Kingsway Hospital, Derby.

DEWSBURY. STAINCLIFFE GENERAL HOSPITAL, Healds-road, DEWSBURY, YORKS. (314 Beds.) Applications are invited for the post of RESIDENT SURGICAL OFFICER (Senior House Officer grade) vacant now. This post is tenable for 12 months but applications will be considered for a shorter period. The Hospital is recognised for the F.R.C.S. and the post offers excellent experience in general surgery.

Applications, stating age, nationality, qualifications and experience, together with copies of recent testimonials, should be submitted to the Administrative Officer.

DEWSBURY. THE GENERAL HOSPITAL. Applications are invited for the following positions at the above Hospital:—

SENIOR HOUSE OFFICER (surgical).

HOUSE OFFICER (surgical).

The terms and conditions of service will be in accordance with recommendations of the Ministry of Health.

Applications, stating age, qualifications, and experience, together with the names and addresses of 2 referees, should be sent to the Administrative Officer at the Hospital.

DORCHESTER. DORSET COUNTY HOSPITAL. (113 Beds.) HOUSE SURGEON required, Male or Female, post vacant mid-January, 1953, and tenable for 6 months.

Applications, giving details of age, experience, qualifications and nationality, together with copies of testimonials, to the Group Secretary, West Dorset Group Hospital Management Committee, Damers-road, Dorchester, Dorset, immediately.

DORCHESTER. DORSET COUNTY HOSPITAL. South WEST METROPOLITAN REGIONAL HOSPITAL BOARD. WEST DORSET GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SURGICAL REGISTRAR (Registrar grade) at above Hospital. Salary according to experience, with a deduction of £160 p.a. if resident.

Application forms, which should be returned by 31st January, 1953, are obtainable from the Group Secretary, West Dorset Group Hospital Management Committee, Damers-road, Dorchester.

DOUGLAS. NOBLE'S ISLE OF MAN HOSPITAL. (160 Beds.) Applications are invited for the posts of HOUSE PHYSICIAN and HOUSE SURGEON at this busy Hospital. The posts become vacant at the end of January, 1953, and February, 1953, respectively, and offer varied experience in pleasant surroundings. 4 residents on the staff and salary at the rate of £350, £400 and £450 a year according to experience. A deduction of £100 a year for residential emoluments. The appointments are tenable for 6 months in first instance.

Applications, stating full details, with copies of 2 recent testimonials, to the Secretary, Noble's Hospital, Douglas, Isle of Man.

DOVER, KENT. BUCKLAND HOSPITAL. Applications are invited for the post which is now vacant of HOUSE PHYSICIAN at the above Hospital. Duties include some pædiatrics. Salary £350, £400 or £450 a year according to experience, less a deduction of £100 a year for residential emoluments.

Applications, stating age, qualifications, and the names and addresses of 2 referees, to the Group Secretary, South East Kent Hospital Management Committee, "Ash-Eton," Radnor Park West, Folkestone.

DOVER, KENT. BUCKLAND HOSPITAL. Applications are invited from registered medical practitioners (Male or Female) for the post which is now vacant of HOUSE PHYSICIAN at the above Hospital. Duties also include some E.N.T. work. The salary will be £350, £400 or £450 a year according to experience. A deduction of £100 a year will be made for residential emoluments.

Applications, stating age, qualifications, experience, and the names and addresses of 2 responsible persons to whom reference may be made as to professional ability, should be addressed to the Group Secretary, South East Kent Hospital Management Committee, "Ash-Eton," Radnor Park West, Folkestone.

DOVER. ROYAL VICTORIA HOSPITAL. Applications are invited for the post which is now vacant of JUNIOR HOUSE SURGEON at the above Hospital. Salary £350, or £400 a year, less £100 a year for residential emoluments.

Applications, stating age, qualifications, experience, and the names and addresses of 2 referees, to the Group Secretary, South East Kent Hospital Management Committee, "Ash-Eton," Radnor Park West, Folkestone.

DOVERCOURT, ESSEX. HARWICH AND DISTRICT HOSPITAL. (30 Beds.) Applications invited for appointment of SENIOR HOUSE OFFICER (Resident Surgical Officer). Tenable for period of 1 year from 1st February. Salary in accordance with the terms of service issued by the Ministry of Health.

Applications, with copies of 3 testimonials, should be forwarded to the Secretary, Colchester Group Hospital Management Committee, 14, Pope's-lane, Colchester, Essex.

DUDLEY, STOURBRIDGE AND DISTRICT HOSPITAL GROUP. BIRMINGHAM REGION. Applications invited from registered practitioners for following appointments:—

Guest Hospital, Dudley (154 Beds)

HOUSE OFFICER (resident surgical). Post vacant January, 1953.

Corbett Hospital, Stourbridge (106 Beds)

CASUALTY OFFICER. Post now vacant.

Wordsley, near Stourbridge (478 Beds)

SENIOR HOUSE OFFICER (resident), surgical, post now vacant. Salary £670 p.a., less £150 p.a. in respect of residential emoluments.

SENIOR HOUSE OFFICER (resident), medical, post now vacant. Salary £670 p.a., less £150 p.a. in respect of residential emoluments.

Applications, stating age, experience, with copies of 3 recent testimonials, to— H. RAYMOND HURST,
Secretary to the Management Committee.
The Guest Hospital, Dudley.

DUNDEE ROYAL INFIRMARY. Applications are invited for the post of HOUSE OFFICER in the Fracture and Orthopædic Department commencing 1st February, 1953.

Apply, with 2 references, as early as possible to the Medica Superintendent.

DUNDEE ROYAL INFIRMARY. Applications are invited for the post of HOUSE OFFICER or SENIOR HOUSE OFFICER in the Ophthalmic Department, commencing 1st February, 1953.

Apply, with 2 references, as early as possible to the Medica Superintendent.

DUNDEE ROYAL INFIRMARY.

HOUSE SURGEON (ophthalmology).

HOUSE SURGEON (Fracture and Orthopædic Department). Required for 6 months from 1st February, 1953. Posts recognised for pre-registration service.

Apply, naming 2 referees, to the Medical Superintendent.

EDINBURGH. PRINCESS MARGARET ROSE HOSPITAL FOR CRIPPLED CHILDREN. Applications are invited from registered medical practitioners for appointment as RESIDENT HOUSE SURGEON, for 6 months commencing as soon as possible. National Health Service scale.

Applications, stating date of birth, qualifications and experience, and names of 2 referees, to be sent immediately to the Medical Superintendent, Edinburgh Central Hospitals, 18, Rillbank-terrace, Edinburgh, 9.

EAST KILBRIDE, LANARKSHIRE. HAIRMYRES HOSPITAL. (844 Beds.) There are vacancies available for HOUSE OFFICERS in the General Surgical and Thoracic Surgical Departments of the above Hospital for the 6 months period commencing 1st February, 1953. Salary will be according to scale.

Applications, with copies of testimonials, should be sent to Physician-Superintendent.

EASTBOURNE. ST. MARY'S HOSPITAL. (261 Beds.) Applications are invited from registered medical practitioners for the post of GYNÆCOLOGICAL HOUSE SURGEON (28 Beds) with duties in the abnormal Obstetric Unit. Staff of 5 House Officers. Salary in accordance with terms and conditions of Ministry of Health.

Applications, stating age, nationality, qualifications, and experience, together with copies of 2 recent testimonials, to the Secretary, 29, Bedfordwell-road, Eastbourne.

ENFIELD, MIDDLESEX. CHASE FARM HOSPITAL. ENFIELD GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of RESIDENT HOUSE SURGEON (first post), vacant 31st January, 1953. General surgical duties. R practitioners within 3 months of qualification eligible. 6 months appointment.

Applications, stating age, qualifications, experience, and nationality, with the names of 2 referees, to the Secretary of the Management Committee immediately.

ENFIELD, MIDDLESEX. CHASE FARM HOSPITAL. ENFIELD GROUP HOSPITAL MANAGEMENT COMMITTEE. RESIDENT HOUSE PHYSICIAN (second or third post) required 4th February, 1953, for general medical and pædiatric duties. 6 months appointment. R practitioners holding first post may apply.

Applications in applicants own handwriting, stating age, nationality, qualifications and experience, with the names of 2 referees, to the Secretary of the Management Committee as soon as possible.

ENFIELD, MIDDLESEX. CHASE FARM HOSPITAL. ENFIELD GROUP HOSPITAL MANAGEMENT COMMITTEE. RESIDENT HOUSE SURGEON (second or third post) required 17th February, 1953, for general surgical duties. Post, which is tenable for 6 months, is recognised for the F.R.C.S. R practitioners holding first posts may apply.

Applications, stating age, nationality, qualifications, and experience, with the names of 2 referees, to the Secretary of the Management Committee by 31st January, 1953.

EPPING. ST. MARGARET'S HOSPITAL. (485 Beds— 82 general medical beds.) Applications are invited for the post of HOUSE PHYSICIAN to fill a vacancy arising on approximately 20th February, 1953. Busy general hospital with easy access to London. Salary on national scale, less a deduction at the rate of £100 p.a. for board, lodging, &c.

Applications, with copies of 2 recent testimonials, to reach the Group Secretary, Epping Group Hospital Management Committee, St. Margaret's Hospital, Epping, Essex, by 30th January, 1953.

EPPING. ST. MARGARET'S HOSPITAL. (485 Beds— 85 general surgical beds, including E.N.T., Oral and Facio-maxillary Unit.) Applications are invited for the appointment of HOUSE SURGEON for general surgery, including duties in E.N.T. and Eye Department, to fill vacancy arising on 20th February, 1953. Busy general hospital with easy access to London. Salary on national scale, less a deduction at the rate of £100 p.a., for board, lodging, &c.

Applications, with copies of 2 recent testimonials, to reach the Group Secretary, Epping Group Hospital Management Committee, St. Margaret's Hospital, Epping, by 30th January, 1953.

EXETER. ROYAL DEVON AND EXETER HOSPITAL. EXETER AND MID-DEVON HOSPITALS MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners (Male and Female) for the post of HOUSE SURGEON, vacant 11th February, 1953. The appointment is for a period of 6 months.

Applications, with copies of 2 recent testimonials, to be forwarded to the Hospital Secretary by 31st January, 1953.

EXETER. ROYAL DEVON AND EXETER HOSPITAL. EXETER AND MID-DEVON HOSPITALS MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners (Male and Female), for the post of HOUSE SURGEON, vacant 18th February, 1953. The appointment is for a period of 6 months.

Applications, with copies of 2 recent testimonials, to be forwarded to the Hospital Secretary by 31st January, 1953.

EXETER (near). EXMINSTER HOSPITAL. Devon MENTAL HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for RESIDENT JUNIOR HOSPITAL MEDICAL OFFICER. National scale, less a deduction for residential emoluments.

Applications, stating age, qualifications, experience, names of 3 referees, to Medical Superintendent, Exminster Hospital, near Exeter.

FRODSHAM. CROSSLEY HOSPITAL, Kingswood, FRODSHAM. (112 Beds.) Applications are invited for the position of RESIDENT JUNIOR HOSPITAL MEDICAL OFFICER. Salary £700–£50–£1000 p.a. House available. The Hospital is for the treatment of pulmonary tuberculosis; a new Thoracic Surgical Unit will be opened early in 1953.

Applications, stating age, nationality, qualifications and experience, together with the names of 3 referees, should be received by the Physician-Superintendent not later than 8th February, 1953.

GRIMSBY GENERAL HOSPITAL. (220 Beds.) Grimsby HOSPITALS MANAGEMENT COMMITTEE. Applications are invited for the post, vacant 10th February, 1953 (and recognised for the D.L.O.), of SENIOR HOUSE OFFICER, with duties in Surgical and E.N.T. Departments.

Applications, with names of 2 referees, to Hospital Secretary, Grimsby General Hospital.

FOLKESTONE. ROYAL VICTORIA HOSPITAL. Applications are invited for the appointment of SURGICAL HOUSE OFFICER at the above Hospital, which is now vacant. Salary £350, £400, or £450 a year according to experience, less a deduction of £100 a year for residential emoluments. This post is recognised by the Royal College of Surgeons for the F.R.C.S. examination.

Applications, stating age, qualifications, experience, and the names and addresses of 2 referees, to the Group Secretary, South East Kent Hospital Management Committee, "Ash-Eton," Radnor Park West, Folkestone.

GRANGE-OVER-SANDS. WESTMORLAND SANATORIUM. MEATHOP, GRANGE-OVER-SANDS. Applications are invited from registered medical practitioners for the appointment of HOUSE OFFICER (resident) up to Junior Hospital Medical Officer grade according to experience. The Sanatorium contains 160 Beds (male and female).

Applications, stating age, nationality, qualifications and experience, together with copies of 2 recent testimonials, should be sent to the Secretary of the Lancaster and Kendal Hospital Management Committee, Royal Lancaster Infirmary, Lancaster.

GRANTHAM AND KESTEVEN GENERAL HOSPITAL. (117 Beds.) Applications are invited from registered medical practitioners for the post of HOUSE SURGEON (Senior House Officer grade), which becomes vacant on 6th February, 1953. Salary £670 p.a., less £130 p.a. for residential emoluments.

Applications, stating age, experience, qualifications, and nationality, together with copies of recent testimonials, should be forwarded immediately to the Secretary, Grantham Hospital Management Committee, 101, Manthorpe-road, Grantham, Lincs.

GREAT YARMOUTH AND GORLESTON GENERAL HOSPITAL, DENE SIDE, GREAT YARMOUTH. 2 vacancies at the above Hospital for HOUSE SURGEONS (Male or Female). The Hospital is staffed by a Consultant General Surgeon, and a Consultant E.N.T. Surgeon and is regularly visited by Consultant staff from the Norfolk and Norwich Hospital, Norwich. Salary in both cases £350, £400, or £450 according to experience, less £100 for residential emoluments.

Applications, stating age, qualifications, experience, with names of 2 referees, to Secretary of Hospital.

GREAT YARMOUTH AND GORLESTON GENERAL HOSPITAL. NORFOLK AND NORWICH GROUP. EAST ANGLIAN REGIONAL HOSPITAL BOARD. SURGICAL REGISTRAR. The post offers wide experience in all aspects of general surgery. Appointment for 1 year renewable for second year.

Applications, stating age, qualifications, and details of present and previous appointments, together with the names of 3 referees, to Secretary of Board, 117, Chesterton-road, Cambridge, by 26th January, 1953. Candidates invited to visit the Hospital by direct arrangement with the Secretary-Superintendent at the Hospital.

GUILDFORD. ROYAL SURREY COUNTY HOSPITAL. (229 Beds.) HOUSE SURGEON to Orthopædic and Traumatic Unit required. The post is resident and tenable for 6 months and is recognised for the F.R.C.S. examination. This is not a pre-registration post.

Applications, with copies of 3 testimonials, should be sent to the Hospital Secretary as soon as possible.

HAYWARDS HEATH (near), SUSSEX. CUCKFIELD HOSPITAL. MID-SUSSEX HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of RESIDENT HOUSE OFFICER for Maternity Unit of 51 Beds and gynæcological ward. The post becomes vacant on 16th February, 1953. National salary scale and conditions of service.

Applications, stating age, qualifications and experience, accompanied by copies of 2 recent testimonials, should be sent to the Deputy Group Secretary, Mid-Sussex Hospital Management Committee, Cuckfield Hospital, Cuckfield, near Haywards Heath, Sussex.

HALIFAX AREA HOSPITALS MANAGEMENT COMMITTEE. 2 SENIOR HOUSE OFFICERS required in the Anæsthetic Departments at Royal Halifax Infirmary (301 Beds) and Halifax General Hospital (425 Beds); both busy acute general hospitals. Opportunities for studying for D.A. Salary £670 p.a., with deduction of £130 p.a. for residence, &c.

Applications, stating age, qualifications, and experience, with copies of 2 recent testimonials, to be forwarded to Group Secretary, Royal Halifax Infirmary, Halifax, Yorkshire.

HEREFORD. COUNTY HOSPITAL. (333 Beds.) Here-FORDSHIRE HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for appointment of HOUSE OFFICER (general surgery), vacant as from 6th March, 1953. Conditions of Service applicable to hospital medical and dental staffs (England and Wales).

Applications, with copies of 2 recent testimonials, should be sent to the Medical Superintendent, County Hospital, Hereford.

HERTFORD COUNTY HOSPITAL. (171 Beds. Hospital situated 21 miles from London.) Applications are invited for appointment of HOUSE SURGEON (Male or Female), second post, for general surgery. R practitioners holding first post may apply. 6 months appointment. Salary at rate of £400 p.a., less £100 p.a. for residential emoluments. Duties to commence 8th February, 1953.

Applications to Group Secretary, Hertford Group Hospital Management Committee, County Hospital, Hertford, Herts.

HERTFORD COUNTY HOSPITAL. (171 Beds. Hospital situated 21 miles from London.) Applications are invited from registered medical practitioners for the appointment of a Whole-time Temporary REGISTRAR (surgical) at the above Hospital. Appointment to commence immediately with tenure up to 6 months. Salary at the rate of £775 p.a., non-resident.

Applications, giving fullest details, together with copies of recent testimonials or the names of referees, to Group Secretary, Hertford Hospital Management Committee, County Hospital, Hertford, Herts.

HERTFORD COUNTY HOSPITAL. (171 Beds. Hospital situated 21 miles from London.) CASUALTY HOUSE OFFICER (Male or Female), first, second, or third post held, with attachment to Paediatrician and Ophthalmic Consultant. Salary £350–£450 p.a., less £100 p.a. residential emoluments. Appointment to commence immediately.

Applications, with full details and references, to Secretary, County Hospital, Hertford, Herts.

HILLINGDON HOSPITAL, near Uxbridge, Middlesex. HOUSE SURGEON (resident—Male) for obstetric duties at above Hospital. Previous obstetric experience desirable but not essential. Post recognised for D.Obst.R.C.O.G. and M.R.C.O.G.

Applications, stating age, nationality, qualifications and experience, and enclosing copies of not more than 3 testimonials, to Medical Director, by 26th January.

HILLINGDON HOSPITAL, Uxbridge, Middlesex. (705 Beds—General.) NORTH WEST METROPOLITAN REGIONAL HOSPITAL BOARD. ANÆSTHETIC REGISTRAR required for 1 year at above Hospital. Post recognised for D.A. Hospital may be visited by direct appointment.

Application forms obtainable from, and returnable to, Group Secretary, Uxbridge Group Hospital Management Committee, St. John's Hospital, Kingston-lane, Uxbridge, Middlesex, by 26th January.

HILLINGDON HOSPITAL, near Uxbridge, Middlesex. PÆDIATRIC HOUSE PHYSICIAN (resident) at above Hospital. Duties include experience in General Medical Children's Ward, Neonatal Unit, and Pædiatric Outpatient Clinics. Appointment recognised for D.C.H. Persons seeking pre-registration posts will be considered.

Apply at once, stating age, qualifications, nationality, and experience, with copies of not more than 3 recent testimonials, to the Medical Director.

HILLINGDON HOSPITAL AND MOUNT PLEASANT HOSPITAL, SOUTHALL. HOUSE PHYSICIAN required for tuberculosis beds at above Hospitals.

Apply at once, with copies of not more than 3 recent testimonials, to Medical Director, Hillingdon Hospital, Uxbridge, Middlesex.

HASTINGS AND ST. LEONARDS. BUCHANAN HOSPITAL. (94 Beds.) SENIOR HOUSE OFFICER required for Urology and Children's Surgery; post vacant now, is recognised for F.R.C.S., may be tenable for 6 or 12 months. National scale of salary.

Apply to Hospital Administrator.

HAVERFORDWEST. PEMBROKE COUNTY WAR MEMORIAL HOSPITAL. (162 Beds—recognised by Royal College of Surgeons.) Applications are invited for the post of RESIDENT HOUSE OFFICER (surgical). Salary £350, £400, £450 p.a., according to experience, less £100 p.a. for board and residence.

Applications, stating age, qualifications, experience, and nationality, with names and addresses of 3 referees, to Group Secretary, West Wales Hospital Management Committee, Glangwili, Carmarthen.

HAVERFORDWEST. PEMBROKE COUNTY WAR MEMORIAL HOSPITAL. (162 Beds.) Applications are invited for the post of RESIDENT HOUSE OFFICER (medical). Salary £350, £400, £450 p.a., according to experience, less £100 p.a. for board-residence.

Applications, stating age, qualifications, experience, and nationality, with names and addresses of 3 referees, to Group Secretary, West Wales Hospital Management Committee, Glangwili, Carmarthen.

HULL ROYAL INFIRMARY. Hull A Group Hospital MANAGEMENT COMMITTEE. Applications are invited for the following posts:—

2 HOUSE SURGEONS (1 Parent Hospital, 1 Sutton Branch Hospital). Recognised for F.R.C.S.

ORTHOPÆDIC HOUSE SURGEON.

CASUALTY OFFICER (Senior House Officer grade).

Applications to the Hospital Secretary.

HUNTINGDON COUNTY HOSPITAL. The Hospital is approved by the licensing authority for pre-registration service and applications are invited for the post of JUNIOR HOUSE OFFICER (medical). The selected candidate will be required to look after medical and pædiatric cases and may be called upon to give emergency anæsthetics.

Apply, with full particulars and names of 2 referees, to Group Secretary, Hospital Management Committee, Newmarket General Hospital, Newmarket.

HUDDERSFIELD HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of HOUSE SURGEON to the Princess Royal Maternity Home (57 Beds), to commence on 22nd February, 1953. The holder of the post, which is recognised for the D.Obst.R.C.O.G., will have access to the abnormal maternity and gynæcological beds at the Royal Infirmary. The department is under the control of 2 Consultant Obstetricians and Gynæcologists. Salary in accordance with the terms and conditions for hospital medical and dental staffs.

Applications to be addressed to—

H. J. JOHNSON, Secretary to the Management Committee.

Royal Infirmary, Huddersfield.

HUDDERSFIELD ROYAL INFIRMARY. (312 Beds.) HUDDERSFIELD HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of SENIOR HOUSE OFFICER in Ophthalmology (non-resident), to commence duties immediately. The post is recognised for the Diploma in Ophthalmology. Salary in accordance with the terms and conditions of service for hospital medical and dental staffs.

Applications, stating age, nationality, qualifications and experience, together with copies of 3 recent testimonials, should be sent to the undersigned as soon as possible.

H. J. JOHNSON, Secretary to the Management Committee.

The Royal Infirmary, Huddersfield.

HUDDERSFIELD ROYAL INFIRMARY. (312 Beds.) HUDDERSFIELD HOSPITAL MANAGEMENT COMMITTEE. HOUSE SURGEON required to commence duty on 28th January, 1953. Salary in accordance with the terms and conditions of service for hospital medical and dental staffs, with full residential emoluments.

Applications, together with copies of 3 recent testimonials, to be addressed to the undersigned as soon as possible.

H. J. JOHNSON, Secretary to the Management Committee.

The Royal Infirmary, Huddersfield.

IPSWICH. EAST SUFFOLK AND IPSWICH HOSPITAL. (360 Beds.) Applications are invited for the post of HOUSE SURGEON to the General Consultant Surgeon. The post, which is graded House Officer (first, second, or third post), is recognised for the F.R.C.S. examination.

Applications, stating age, nationality, experience, and copies of recent testimonials, to the Hospital Secretary.

IPSWICH. EAST SUFFOLK AND IPSWICH HOSPITAL. (360 Beds.) Applications are invited for the post of HOUSE SURGEON to the E.N.T. and Ophthalmic Departments. Post recognised for D.L.O. examination.

Applications, stating age, nationality, experience, and copies of recent testimonials to the Hospital Secretary.

ISLE OF WIGHT GROUP HOSPITAL MANAGEMENT COMMITTEE.

HOUSE SURGEONS.

St. Mary's Hospital, Newport, I.W., vacant 1st February, 1953.

Royal I.W. County Hospital, Ryde, vacant 21st February, 1953.

Posts approved under Medical Act.

Applications to Chief Administrative Officer, Clatterford House, Carisbrooke, I.W.

INVERNESS HOSPITALS BOARD OF MANAGEMENT. RAIGMORE HOSPITAL. HOUSE SURGEON required for 6 months from 1st February, 1953. Post recognised for pre-registration training.

Applications, with references to Medical Superintendent.

INVERNESS HOSPITALS BOARD OF MANAGEMENT. RAIGMORE HOSPITAL. ORTHOPÆDIC HOUSE SURGEON (Orthopædic Department—140 Beds) required for 6 months from 1st February, 1953. Post recognised for pre-registration training.

Applications with references to Medical Superintendent.

ISLEWORTH. WEST MIDDLESEX HOSPITAL. North WEST METROPOLITAN REGIONAL HOSPITAL BOARD. Whole-time REGISTRAR required in the Department of Physical Medicine at above Hospital. The Department is a large one and includes a Unit with 10 Beds under the Physician in physical medicine. Candidates should have had good experience in general medicine. Department recognised for Diploma of Physical Medicine. Hospital may be visited by direct appointment.

Application forms obtainable from, and returnable to, Secretary, South West Middlesex Group Hospital Management Committee, West Middlesex Hospital, Isleworth, by 27th January, 1953.

LANCASTER MOOR HOSPITAL, Lancaster. (Regional Mental Hospital—3000 Beds.) Applications are invited for the post of JUNIOR HOSPITAL MEDICAL OFFICER (Male or Female). Preference given to candidates who have held house appointments at general hospitals. Modern methods of investigation and treatment carried out. Outpatient Clinics (3) staffed from the Hospital. Salary £700 p.a.–£50–£1000 p.a. with appropriate deductions for residential amenities for single person; unfurnished house available for married man and family. Post subject to National Health Service (Superannuation) Regulations, 1950, and the passing of a medical examination.

Applications, stating age, qualifications and experience, with names of 2 referees, to be sent to the Medical Superintendent.

LANCASTER. ROYAL LANCASTER INFIRMARY. (230 Beds.) Applications are invited for the appointment of RESIDENT HOUSE OFFICER (surgical). The successful applicant will work with a Consultant Surgical Unit and attend at Consultative clinics. The post is vacant now and normally tenable for 6 months.

Applications, with names of 2 referees, to be addressed to the Secretary, Royal Lancaster Infirmary.

LEICESTER GENERAL HOSPITAL AND ROYAL INFIRMARY, SHEFFIELD REGIONAL HOSPITAL BOARD. Applications are invited from registered medical practitioners for the whole-time post of REGISTRAR (orthopædics) to the above hospitals which are recognised for the F.R.C.S. The appointment is for 1 year in the first instance and may be renewed for a further year.

Applications, giving age, nationality, qualifications, present and previous appointments with dates, together with names and addresses of 3 referees, should be sent to the Secretary, Sheffield Regional Hospital Board, Fulwood House, Old Fulwood-road, Sheffield, 10, to arrive not later than 2nd February, 1953.

LEICESTER ROYAL INFIRMARY. Sheffield Regional HOSPITAL BOARD. Applications are invited from registered medical practitioners for the non-resident whole-time post of REGISTRAR (ophthalmology) to the above Hospital. The appointment is for 1 year in the first instance and may be renewed for a further year.

Applications, giving age, nationality, qualifications, present and previous appointments with dates, together with names and addresses of 3 referees, should be sent to the Secretary, Sheffield Regional Hospital Board, Fulwood House, Old Fulwood-road, Sheffield, 10, to arrive not later than 26th January, 1953.

LEICESTER ROYAL INFIRMARY. Applications are invited for the post of SENIOR HOUSE OFFICER (Casualty Department), immediate vacancy. The post gives opportunity for study for Final examination for Fellowship.

Applications, with copies of 3 testimonials, forthwith, to Secretary, Leicester No. 1 Hospital Management Committee, 38A, East Bond-street, Leicester.

LEICESTER ROYAL INFIRMARY. Leicester Regional CENTRE FOR RADIOTHERAPY. Applications are invited for the resident post of SENIOR HOUSE OFFICER (radiotherapy) or REGISTRAR if in possession of Part I of the D.M.R.T., vacant 1st February.

Candidates should state age, nationality, qualifications and submit copies of 3 recent testimonials, to Secretary, Leicester No. 1 Hospital Management Committee, 38A, East Bond-street, Leicester.

LEEDS REGIONAL HOSPITAL BOARD invites applications for the following REGISTRAR posts :—

Anæsthetics

(*a*) Hull A Group with additional duties at hospitals in Hull B and East Riding Groups (non-resident).

(*b*) Huddersfield Group (resident or non-resident).

Chest Diseases

(*a*) Middleton Hospital, near Ilkley (400 Beds). There are good surgical and radiological facilities and both pulmonary and non-pulmonary cases are treated. Residential accommodation is available for a single person.

(*b*) For initial duties with the Mass Radiography Service in Bradford with sessions at the Bradford Chest Clinic under the immediate supervision of the Senior Chest Physician in the area. After a satisfactory term in mass radiography the selected candidate will be considered for a further period of training in selected Regional Sanatoria.

(*c*) Scotton Banks Sanatorium, Knaresborough (resident).

(*d*) Castle Hill Sanatorium, Cottingham, E. Yorks (non-resident).

General Medicine

Rheumatism Centre, Harrogate, and the Rheumatism Clinic at Leeds General Infirmary (non-resident). This appointment offers considerable scope for experience in rheumatic diseases.

General Surgery

Pontefract and Castleford Group (resident—married accommodation available).

Infectious Diseases

Leeds Road Hospital, Bradford (resident).

Obstetrics and Gynæcology

Halifax Group (resident). Recognised for M.R.C.O.G. Appointment will be vacant on 1st April, 1953, or probably earlier.

Orthopædic Surgery

(*a*) Pontefract and Castleford Group (resident).

(*b*) General Hospital, Batley, and other hospitals in the Dewsbury, Batley, and Mirfield Group (resident).

(*c*) Marguerite Hepton Memorial Orthopædic Hospital, Thorp Arch, near Wetherby (75 long-stay children's beds). A 3-bedroomed, partly furnished house in available in the Hospital grounds. Appointment to commence on 1st April, 1953.

Otolaryngology

(*a*) Huddersfield and Halifax Groups. Appointment is non-resident but successful candidate will be required to reside in Huddersfield.

(*b*) Hull Royal Infirmary and associated hospitals (non-resident).

Both Departments are recognised for the Fellowship and the D.L.O.

Pathology

St. James's Hospital, Leeds, and the Regional Blood Transfusion Centre, Seacroft, Leeds (non-resident). This joint post will give considerable opportunity for experience in all branches of pathology especially hæmatology.

Psychiatry

(*a*) Stanley Royd Hospital, Wakefield (2000 Beds). Residential accommodation is available for a single person.

(*b*) De la Pole Hospital, Willerby, E. Yorks (1000 Beds), and associated clinics (resident or non-resident). Accommodation available for a single person or a married person without children.

(*c*) St. James's (General) Hospital Psychiatric Unit, Leeds. This post is resident and offers special opportunity for experience with neurotic and psychosomatic patients.

Facilities for study for the D.P.M. at Leeds University will be given to persons appointed to the above posts.

Applications, stating age, qualifications, and details of present and previous appointments with dates, together with the names of 3 referees, should be forwarded to the Secretary, Joint Registrars Committee, Park-parade, Harrogate, not later than 31st January, 1953.

LEIGH INFIRMARY, Leigh, Lancs. Senior House OFFICER in General and Orthopædic Surgery required at Leigh Infirmary. Post now vacant.

Applications, stating age, nationality, and previous hospital appointments, together with the names of 2 referees, should be received by the undersigned as soon as possible.

T. W. HURST, Secretary,
Wigan and Leigh Hospital Management Committee.
Knowsley House, Wigan.

LEAMINGTON SPA. WARNEFORD GENERAL HOSPITAL. (207 Beds.) SOUTH WARWICKSHIRE HOSPITAL GROUP (NO. 14). RESIDENT HOUSE SURGEON (general surgery). Pre-registration first, second, or third post. Vacant now.

Apply to Hospital Secretary.

LEAMINGTON SPA. WARNEFORD GENERAL HOSPITAL. (207 Beds.) SOUTH WARWICKSHIRE HOSPITAL GROUP (NO. 14). Applications are invited for the appointment of RESIDENT ANÆSTHETIST. R practitioners holding first posts may apply. 6 months appointment. The post is recognised for the D.A. Salary £300 or £350 according to the previous number of appointments held, plus full residential emoluments.

Apply as soon as possible to the Hospital Secretary.

LEAMINGTON SPA. WARNEFORD GENERAL HOSPITAL. (207 Beds.) SOUTH WARWICKSHIRE HOSPITAL GROUP (NO. 14). HOUSE SURGEON for Ophthalmic and E.N.T. Departments, tenure of post 6 months. Salary dependent on number of posts previously held and in accordance with terms and conditions of service for hospital medical and dental staffs.

Apply as soon as possible to Hospital Secretary.

LIVERPOOL, 15. SEFTON GENERAL HOSPITAL. (985 Beds, 123 Cots.) SOUTH LIVERPOOL HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the following resident appointments which will become vacant at the above-named Hospital on 1st April, 1953, and will be for a period of 6 months. These posts are approved as pre-registration posts.

5 HOUSE PHYSICIANS (general).
2 HOUSE PHYSICIANS (psychiatric).
2 HOUSE SURGEONS (general).
2 HOUSE SURGEONS (obstetric).
1 HOUSE PHYSICIAN (tropical).

The terms and conditions of service will be in accordance with the regulations of the Ministry of Health, the salary being at the rate of £350 p.a. for the first post held, £400 p.a. for the second post held, and £450 p.a. for the third and any subsequent post held. A deduction at the rate of £100 p.a. will be made in respect of board, lodging, and other services provided.

Application forms may be obtained from the undersigned to whom they should be returned not later than Monday, 2nd February, 1953.

GARNET CHAPLIN, Secretary to the Committee.

LIVERPOOL. THE UNITED LIVERPOOL HOSPITALS. EAR, NOSE AND THROAT INFIRMARY. Applications are invited for a temporary post as SENIOR HOUSE OFFICER (E.N.T.) for the period to 30th September, 1953.

Apply as soon as possible, stating age, and full particulars of qualifications, and experience, to the Secretary, The United Liverpool Hospitals, 80, Rodney-street, Liverpool, 1.

LIVERPOOL. THE UNITED LIVERPOOL HOSPITALS. LIVERPOOL MATERNITY HOSPITAL. Applications are invited for a temporary post as SENIOR HOUSE OFFICER (pathology) for the period to 30th September, 1953.

Apply not later than 31st January, 1953, on forms obtainable from the Secretary, The United Liverpool Hospitals, 80, Rodney-street, Liverpool, 1.

LIVERPOOL. THE UNITED LIVERPOOL HOSPITALS. ROYAL LIVERPOOL CHILDREN'S HOSPITAL. Applications are invited for a temporary post as ORTHOPÆDIC HOUSE SURGEON (resident) for the period to 31st March, 1953.

Apply as soon as possible on forms obtainable from the Secretary, The United Liverpool Hospitals, 80, Rodney-street, Liverpool, 1.

LIVERPOOL. THE UNITED LIVERPOOL HOSPITALS. THE WOMEN'S HOSPITAL. Applications are invited for a temporary post as SENIOR HOUSE OFFICER (gynæcological) for the period from 1st April to 30th September, 1953.

Apply by 14th February, 1953, on forms obtainable from the Secretary, The United Liverpool Hospitals, 80, Rodney-street, Liverpool, 1.

LIVERPOOL. AINTREE HOSPITAL (Late Fazakerley Sanatorium). LIVERPOOL AND DISTRICT FAZAKERLEY GROUP OF HOSPITALS MANAGEMENT COMMITTEE. RESIDENT SENIOR HOUSE MEDICAL OFFICER. Applications are invited from registered medical practitioners. The Hospital is for the treatment of pulmonary and non-pulmonary tuberculosis, and is a main centre for thoracic surgery and has an Orthopædic Department. Salary will be in accordance with terms and conditions of service for hospital medical staff.

Applications, endorsed "Resident Senior House Medical Officer," to be submitted immediately to the Physician-Superintendent, Aintree Hospital, Fazakerley, Liverpool, 9.

LINCOLN COUNTY HOSPITAL. (200 Beds.) Lincoln NO. 1 HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER in Surgery (resident). Post recognised for F.R.C.S. Terms and conditions of service in accordance with those laid down for hospital medical and dental staffs.

Applications, together with copies of 3 recent testimonials, should be forwarded to the undersigned as soon as possible.

R. W. HOWICK, Group Secretary.

LLANELLY HOSPITAL. (164 Beds.) Glantawe Hospital MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the resident post of SENIOR HOUSE OFFICER for work in the Casualty Department of the above Hospital.

Full particulars, stating age, qualifications and experience should be addressed to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
Swansea Hospital, St. Helen's-road, Swansea.

LOUTH, LINCS. COUNTY INFIRMARY. (200 Beds.) Applications are invited for the post of HOUSE OFFICER (obstetrics, gynæcology and some other duties) which is now vacant at this busy General Hospital. A deduction of £100 p.a. will be made for residential emoluments.

Applications, giving full particulars, together with names of 2 referees, to be addressed to the Hospital Secretary.

LUTON AND DUNSTABLE HOSPITAL, Luton, Beds. Applications are invited for the appointment of HOUSE SURGEON for Accident Service and Casualty. The post will be for 6 months in the first instance, and is now vacant.

Applications, stating age, nationality, qualifications and experience, together with copies of 3 recent testimonials, should be sent to the Secretary, immediately.

MANCHESTER (near). ALTRINCHAM GENERAL HOSPITAL AND ANNEXE. (130 Beds—recognised under F.R.C.S. regulations.) NORTH AND MID CHESHIRE HOSPITAL MANAGEMENT COMMITTEE. Required, SENIOR HOUSE OFFICER (surgical), to commence 1st February, 1953. Salary £670 p.a. This appointment, in a busy hospital staffed by Manchester Consultants, offers excellent opportunity of practical surgical experience to suitable qualified candidates.

Applications, together with 2 recent testimonials, to be sent to Secretary, North and Mid Cheshire Hospital Management Committee, Sinderland-road, Altrincham, Cheshire, as soon as possible.

MANCHESTER (near). ALTRINCHAM GENERAL HOSPITAL AND ANNEXE. (130 Beds.) NORTH AND MID CHESHIRE HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of CASUALTY OFFICER (Senior House Officer grade), to commence 1st February, 1953. This appointment in a busy general hospital staffed by Manchester Consultants affords excellent experience to suitably qualified candidates. Opportunity will be given to assist in the major surgical work of the Hospital. Application has been made for this post to be recognised under F.R.C.S. regulations.

Applications, together with 2 recent testimonials, should be sent to the Group Secretary, North and Mid Cheshire Hospital Management Committee, Sinderland-road, Altrincham, as soon as possible.

MANCHESTER (near). ALTRINCHAM GENERAL HOSPITAL. (130 Beds.) NORTH AND MID CHESHIRE HOSPITAL MANAGEMENT COMMITTEE. Required, JUNIOR HOUSE OFFICER (surgical) to commence duties on or about 7th February, 1953. This is a busy hospital, staffed by Manchester Consultants and a full-time Senior House Officer. Salary £350–£450 p.a., according to previous posts held, less residential emoluments.

Applications should be sent to the Group Secretary, North and Mid Cheshire Hospital Management Committee, The Hospital, Sinderland-road, Altrincham, Cheshire.

MANCHESTER, 19. THE DUCHESS OF YORK HOSPITAL FOR BABIES. MANCHESTER BABIES' AND CHILDREN'S HOSPITAL MANAGEMENT COMMITTEE. Required, HOUSE PHYSICIAN (Male or Female) for 6 months from 25th February, 1953. Salary in accordance with Ministry of Health scale.

Applications, with copies of 3 testimonials to be sent by, 31st January to the Administrative Officer of the Hospital.

MANCHESTER. WEST MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the following posts :—

Park Hospital, Davyhulme (General Hospital—426 Beds)

SENIOR HOUSE OFFICER (anæsthetics), vacant 31st January, 1953. The Hospital is recognised by the Conjoint Board for training for the Diploma in Anæsthetics.

2 HOUSE OFFICERS (general surgery). 1 post now vacant, the other will become vacant at the end of January, 1953.

HOUSE OFFICER (obstetrics), vacant early February, 1953.

HOUSE OFFICER (non-tuberculous thoracic surgery) for Manchester Regional Hospital Board Centre. Now vacant.

HOUSE OFFICER (general surgery) with some duties in E.N.T. work. Now vacant.

The 2 House Officer (general surgery) posts are recognised for training for the F.R.C.S. examination and the House Officer (obstetrics) post is recognised for training for the M.R.C.O.G. and D.Obst.R.C.O.G. examinations.

Vacancies occur periodically in the various departments at Park Hospital and House Officers are eligible for appointment to another specialty at the end of the original term of service when such vacancies occur.

Eccles and Patricroft Hospital (General Hospital—72 Beds)

SENIOR HOUSE OFFICER. Now vacant.

HOUSE OFFICER. Now vacant.

The work of the Hospital is mainly surgical and there is a busy Outpatient Department.

Salaries for House Officer posts £350–£450 p.a., according to experience, plus £50 p.a. for House Officer post Eccles and Patricroft Hospital. £100 p.a. deduction for residential accommodation and services. 6 months appointments. The Senior House Officer appointments will be for 12 months at a salary of £670 p.a., less £130 p.a. (Eccles and Patricroft); £155 p.a. (Park Hospital), for residential accommodation and services.

Application forms from the Secretary, Park Hospital, Davyhulme, Manchester.

MANCHESTER. SAINT MARY'S HOSPITALS. United MANCHESTER HOSPITALS. Applications are invited from registered medical practitioners (Male or Female) for the post of HOUSE PHYSICIAN in the Neonatal Unit of Saint Mary's Hospitals (attached to the University Department of Child Health) for a period of 6 months, starting on 8th March, 1953. Previous hospital experience essential and pædiatric experience desirable. Duties include the care of the newborn in the maternity department, the care of infants in the infants' ward and work in the clinics under the charge of the Department of Child Health. Salary in accordance with national scale.

Application forms may be obtained from the undersigned and returned, duly completed, not later than 30th January, 1953, to A. R. WISE, Esq., General Superintendent.

Saint Mary's Hospitals, Whitworth Park, Manchester, 13.

MANCHESTER REGIONAL HOSPITAL BOARD and the Board of Governors of the United Manchester Hospitals invite applications from suitably qualified and experienced practitioners for 4 whole-time, non-resident posts of TRAINEE DIAGNOSTIC RADIOLOGISTS tenable for 24 months at a salary of £670 p.a., commencing on 2nd March, 1953. Applicants must be prepared to devote their whole time to the Hospital service, but facilities will be granted for attendance at the University course of instruction for the D.M.R.(D.) which the successful applicants must be prepared to take. This course starts on 2nd March, 1953, and particulars may be obtained from the Postgraduate Dean, Medical School, University of Manchester. Arrangements will be made for each trainee to gain wide experience in all branches of radiodiagnosis in several hospital departments, including that of the Teaching Hospital.

Applicants must fulfil the requirements of the Examining Board in England, 8–11, Queen-square, London, W.C.1, for the D.M.R.(D.) and must submit written evidence to that effect with their applications, which should also state age, nationality, qualifications and previous experience, and be forwarded, together with copies of 2 recent testimonials, to the Senior Administrative Medical Officer, Manchester Regional Hospital Board, Cheetwood-road, Manchester, 8, to reach him not later than 23rd January, 1953.

MANCHESTER REGIONAL HOSPITAL BOARD invite applications for the post of RESIDENT REGISTRAR in General Medicine to the Wigan and Leigh Group of hospitals with main duties at the Royal Albert Edward Infirmary, Wigan.

Forms of application may be obtained from the Secretary, Wigan and Leigh Hospital Management Committee, Knowsley House, Wigan, and should be returned, with copies of 2 recent testimonials, to be received by 31st January, 1953.

MANCHESTER EAR HOSPITAL, Manchester, 15. South MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of HOUSE OFFICER. The Hospital is recognised for the D.L.O. and is staffed by Manchester Consultants.

Applications, stating age, and qualifications, to be forwarded to the Secretary at the Hospital immediately.

MANCHESTER, 20. WITHINGTON HOSPITAL. South MANCHESTER HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of RESIDENT CLINICAL PATHOLOGIST (Senior House Officer grade). Previous experience in pathology not essential the post affording opportunities for gaining experience in all branches of clinical pathology.

Applications, stating age, qualifications, present post, experience, and names of 2 referees, to be forwarded immediately to—

A. H. KEATES, Secretary to the Committee.

Withington Hospital, Manchester, 20.

MACCLESFIELD HOSPITAL. Applications are invited for the post of RESIDENT SENIOR HOUSE OFFICER in Pathology. Previous experience in pathology not necessary, but applicants should have some clinical experience.

Applications, stating age, nationality, qualifications and experience, with copies of 3 recent testimonials, to be sent as soon as possible to—

G. P. SIGGINS, Secretary,
Macclesfield and District Hospital Management Committee.
" Wilierby House," Cumberland-street, Macclesfield.

MACCLESFIELD, CHESHIRE. PARKSIDE MENTAL HOSPITAL. Applications are invited from suitably qualified medical practitioners for the whole-time posts of :—

JUNIOR HOSPITAL MEDICAL OFFICER (Psychiatrist). Salary £700 p.a.–£50–£1000.

SENIOR HOUSE OFFICER (psychiatric). Salary in accordance with the terms and conditions of service of hospital medical staff (England and Wales).

Excellent opportunity exists for gaining experience in all modern psychiatric methods, and close proximity to Manchester allows attendance for D.P.M. Course.

Applications, giving age, nationality, and full details with the names of 3 referees, to be sent to the Medical Superintendent not later than 26th January, 1953.

MAGHULL, near LIVERPOOL. MOSS SIDE HOSPITAL FOR MENTAL DEFECTIVES. (460 Beds.) Locum JUNIOR HOSPITAL MEDICAL OFFICER required immediately. The post is resident. Pay £16 per week, less 69s. per week for board and quarters.

Applications to the Medical Superintendent.

MANSFIELD (near), NOTTS. HARLOW WOOD ORTHOPÆDIC HOSPITAL. (340 Beds.) Applications are invited from registered medical practitioners for the posts of RESIDENT SENIOR HOUSE OFFICERS. The posts are recognised for examination purposes by the Royal College of Surgeons.

Applications, with references or names of referees, to Secretary, Nottingham No. 5 Hospital Management Committee, Harlow Wood, near Mansfield, Notts.

MAIDSTONE. WEST KENT GENERAL HOSPITAL. (135 Beds.) MID-KENT HOSPITAL MANAGEMENT COMMITTEE GROUP 13. Applications are invited for the appointment of HOUSE SURGEON at the above Hospital. R practitioners holding first House Officer posts may apply. 6 months appointment. Salary at the rate of £350, £400, or £450, according to experience. A deduction at the rate of £100 a year is made in respect of board and lodging and other services provided.

Applications should be forwarded as soon as possible to the Administrative Officer at the Hospital.

MILFORD CHEST HOSPITAL, Milford, Surrey. (348 Beds.) GODALMING, MILFORD AND LIPHOOK GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of a SENIOR HOUSE OFFICER (surgical) at the above Hospital. The appointment is residential ; salary and deduction for board, lodging, &c., in accordance with the national scale (£670). All modern forms of treatment are carried out at the Hospital, including major thoracic surgery, a proportion of the beds being set aside for non-tuberculous thoracic surgery.

Applications, giving full details, together with the names of 3 referees, to be sent, as soon as possible, to the Physician-Superintendent, Milford Chest Hospital, Milford, Surrey.

MORECAMBE. QUEEN VICTORIA HOSPITAL. (100 Beds.) Applications are invited for the appointment of RESIDENT SENIOR HOUSE OFFICER (surgical). The successful applicant will work with a Consultant Surgical Unit and attend at Consultative clinics. The post is vacant now and normally tenable for 12 months.

Applications, with names of 2 referees, to be addressed to the Secretary, Royal Lancaster Infirmary.

NEWPORT, I.W. ST. MARY'S HOSPITAL. Casualty OFFICER (Senior House Officer), vacant now. Salary £670, less £130 for accommodation and services.

Applications to Chief Administrative Officer, Clatterford House, Carisbrooke, I.W., with copy testimonials.

NUNEATON. GEORGE ELIOT HOSPITAL. (289 Beds.) SENIOR HOUSE OFFICER required (Obstetric and Gynæcological Department). Salary £670 p.a. Post now vacant. Recognised for M.R.C.O.G. (37 obstetric beds and 20 gynæcological beds). Applicants must have experience in specialty.

Applications to the Hospital Secretary.

NUNEATON. GEORGE ELIOT HOSPITAL. (289 Beds.) HOUSE SURGEON required for General Surgical Department (54 surgical beds). No casualty duties.

Applications to the Hospital Secretary.

NAYLAND, COLCHESTER, ESSEX. BRITISH LEGION SANATORIUM. (207 Beds for treatment of early pulmonary tuberculosis in women.) IPSWICH GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications invited for the appointment of SENIOR HOUSE OFFICER, vacant 1st March, 1953. No married quarters available. Deduction for residential emoluments £150 p.a.

Applications, with 2 testimonials, to the Physician-Superintendent.

NEWCASTLE GENERAL HOSPITAL. (862 Beds.) NEWCASTLE UPON TYNE HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER (1), General Surgical Wards. The above resident post, tenable for 12 months, becomes vacant on 1st February, 1953.

Applications, with 1 copy of 2 testimonials, should be sent to the Secretary, Newcastle General Hospital, Westgate-road, Newcastle upon Tyne, 4, as soon as possible.

NEWCASTLE GENERAL HOSPITAL. (862 Beds.) NEWCASTLE UPON TYNE HOSPITAL MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER (Casualty Department). The above resident (or non-resident) post, tenable for 12 months, becomes vacant on 1st February, 1953.

Applications, with 1 copy of 2 testimonials, should be sent to the Secretary, Newcastle General Hospital, Westgate-road, Newcastle upon Tyne, 4, as soon as possible.

NEWCASTLE. WALKER GATE HOSPITAL. Newcastle UPON TYNE HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the post of HOUSE PHYSICIAN (resident) for duties concerned with pædiatrics and fever cases and routine work in an acute E.N.T. ward. Salary in accordance with the National Health Service terms and conditions of service.

Applications, with testimonials or the names of 2 referees, should be sent to the Group Secretary, Newcastle upon Tyne Hospital Management Committee, Newcastle General Hospital, Westgate-road, Newcastle upon Tyne, 4.

NEWCASTLE. WALKER GATE HOSPITAL. Chest DEPARTMENT. NEWCASTLE UPON TYNE HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of RESIDENT HOUSE OFFICER. There are 105 Beds in this department, and the appointee will be required to carry out duties assigned to him under the supervision of the Senior Chest Physician. Facilities for study available. Salary £670 p.a., less residential charges. National Health Service terms and conditions.

Applications, with testimonials or the names of 2 referees, should be sent to the Group Secretary, Hospital Management Committee, Newcastle General Hospital, Westgate-road, Newcastle upon Tyne, 4.

NORTH EAST METROPOLITAN REGIONAL HOSPITAL BOARD.

(1) REGISTRAR in Psychiatry (mental deficiency), non-resident, South Ockendon Hospital, near Romford, Essex. House available at reasonable charge.

(2) REGISTRAR in Tuberculosis (resident or non-resident), Myland Hospital and Colchester Chest Clinic, Colchester, Essex. Accommodation available if residence preferred.

Appointments subject to review after 1 year.

Separate applications in triplicate, detailing date of birth, qualifications, experience, present appointment, grade and salary, with 3 copies of 2 recent testimonials, to Secretary, 11A, Portland-place, W.1, by 24th January, 1953.

NORTH AND MID-CHESHIRE HOSPITAL MANAGEMENT COMMITTEE. Required, GROUP SENIOR HOUSE OFFICER (Anæsthetist) non-resident, to commence duties on or about 1st February, 1953. Salary £670 p.a. Post recognised for D.A. qualification. This appointment in busy hospitals staffed by Manchester Consultants offers excellent opportunities of practical experience to suitably qualified candidates. The work will be principally at Altrincham General Hospital (130 Beds), and St. Anne's E.N.T. Hospital (53 Beds), but successful candidate will be expected to work at any other hospital in the Group.

Forms of application may be obtained from the Group Secretary, North and Mid-Cheshire Hospital Management Committee, Sinderland-road, Altrincham, Cheshire, and should be returned with copies of 2 recent testimonials, as soon as possible.

NORWICH. NORFOLK AND NORWICH HOSPITAL. PÆDIATRIC DEPARTMENT AT THE JENNY LIND HOSPITAL FOR CHILDREN. Applications are invited for the appointment of HOUSE SURGEON (Male or Female) in the Surgical Section of the Jenny Lind Hospital, which forms the entire Pædiatric Department of the United Norwich Hospitals. The post is recognised under the Medical Act, 1950, for pre-registration service. The duties are under the direct supervision of the Consultant staff of the Norfolk and Norwich Hospital. Salary £350, £400 or £450, less £100 p.a. for residential emoluments.

Applications, stating age, qualifications and experience, with names of 2 referees, to Secretary, Norwich, Lowestoft and Gt. Yarmouth (Group 6) Hospital Management Committee, St. Stephen's-road, Norwich.

NORWICH. NORFOLK AND NORWICH HOSPITAL. (440 Beds.) EAST ANGLIAN REGIONAL HOSPITAL BOARD. ANÆSTHETIC REGISTRAR. Post recognised for D.A. and provides wide experience. Single quarters available. Appointment for 1 year, renewable for second year.

Applications, stating age, qualifications, details of previous and present appointments, together with the names of 3 referees, to Secretary of Board, 117, Chesterton-road, Cambridge, by 26th January, 1953. Candidates are invited to visit the Hospital by direct arrangement with the Hospital Management Committee Secretary at the Norfolk and Norwich Hospital.

NOTTINGHAM. CITY HOSPITAL. (821 Beds.) Applications are invited for the post of SENIOR HOUSE OFFICER to the Department of Thoracic Surgery. Post vacant 15th March, 1953. Salary £670 p.a., less £130 p.a. for residential emoluments. The appointment will be for 1 year.

Applications, stating age, nationality, qualifications, and experience, together with copies of not more than 3 testimonials, to be submitted immediately to the Hospital Secretary, City Hospital, Hucknall-road, Nottingham.

NOTTINGHAM AND MIDLAND EYE INFIRMARY. HOUSE SURGEON (resident) required at the above Infirmary. Salary and conditions of service in accordance with the published conditions of the Ministry of Health. Duties to commence immediately. This post is recognised for the D.O.M.S. examination.

Applications, stating age, qualifications, and experience, together with copies of testimonials, to be sent to—

H. M. STANLEY, Secretary,
Nottingham No. 1 Hospital Management Committee.
General Hospital, Nottingham.

NOTTINGHAM GENERAL HOSPITAL. Applications are invited from registered medical practitioners for the post of RESIDENT SENIOR HOUSE OFFICER for the Casualty Department. Salary (less £150 emoluments) and conditions of service in accordance with those laid down by the Ministry; duties to commence as soon as possible.

Applications, stating age, qualifications and experience, together with copies of testimonials, to be sent to—

General Hospital, Nottingham. HENRY M. STANLEY.

NOTTINGHAM GENERAL HOSPITAL. Applications are invited from registered medical practitioners (Male or Female) for the appointment of RESIDENT ANÆSTHETIC SENIOR HOUSE OFFICER; duties to commence as soon as possible. Terms and conditions of service in accordance with the published Regulations of the Ministry of Health. £150 deducted for emoluments.

Applications, stating age, qualifications and experience, together with copies of testimonials, to be sent to the undersigned as soon as possible. HENRY M. STANLEY, Secretary.

NOTTINGHAM HOSPITAL FOR WOMEN AND NOTTINGHAM CHILDREN'S HOSPITAL. SHEFFIELD REGIONAL HOSPITAL BOARD. Applications are invited from registered medical practitioners for the whole-time post of REGISTRAR (anæsthetics). It is intended that this post should be interchangeable with a similar one at the City Hospital, Nottingham, which is recognised for training for the D.A. The period to be spent in each post will be defined on appointment. The appointment is for 1 year in the first instance and may be renewed for a further year.

Applications, giving age, nationality, qualifications, present and previous appointments with dates, together with names and addresses of 3 referees, should be sent to the Secretary, Sheffield Regional Hospital Board, Fulwood House, Old Fulwood-road, Sheffield, 10, to arrive not later than 26th January, 1953.

OXFORD. UNITED OXFORD HOSPITALS. Applications invited for the post of SENIOR HOUSE PHYSICIAN to Geriatric Unit (Cowley Road Hospital) for 6 months with effect from 1st February, 1953. Salary at rate of £670 p.a., less £100 p.a. for residence.

Applications, stating age, experience, and qualifications, should be sent, together with names of 2 referees, to Administrator, Radcliffe Infirmary, Oxford, as soon as possible.

OTLEY, YORKS. THE GENERAL HOSPITAL. (170 Beds with full Consultant staff who are members of the teaching staff of Leeds University.) ILKLEY AND OTLEY HOSPITAL MANAGEMENT COMMITTEE. SURGICAL/CASUALTY OFFICER required for recognised post to take up duties on 1st February, 1953. Applications invited for either House Officer or Senior House Officer grading.

Applications, stating full particulars, and nationality, to the undersigned as soon as possible.

E. W. BEST, Group Secretary.

PETERBOROUGH. THE MEMORIAL HOSPITAL. PETERBOROUGH AREA HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the position of HOUSE PHYSICIAN, which will become vacant on 23rd February, 1953. The appointment will be for 6 months.

Applications, with testimonials, should be addressed to the Secretary, The Memorial Hospital, Midland-road, Peterborough.

PLYMOUTH. SOUTH DEVON AND EAST CORNWALL HOSPITAL. Applications are invited from registered medical practitioners for the appointments of :—

(1) HOUSE SURGEON, Devonport Section, vacant 16th February, 1953.

(2) HOUSE SURGEONS, Greenbank Road Section, vacant 13th March, 8th April, 1953, recognised for the Fellowship of the Royal College of Surgeons.

(3) SENIOR HOUSE OFFICER in Surgery, Greenbank Road Section, vacant 13th March, 1953, recognised for the Fellowship of the Royal College of Surgeons.

(4) SENIOR HOUSE OFFICER in Casualty and Fracture Department, Greenbank Road Section, vacant 31st January, 1953.

(5) HOUSE SURGEON, Freedom Fields Section, vacant 22nd February, 1953, recognised for the Fellowship of the Royal College of Surgeons.

(6) SENIOR HOUSE OFFICER in Anæsthetics, Freedom Fields Section, vacant immediately, for a period of 12 months.

(7) RESIDENT ANÆSTHETIST, Greenbank Road Section, vacant 31st March, 1953, recognised for the D.A.

Applications, stating age, nationality, qualifications and experience, with the names of 3 referees, to be sent to the undersigned as soon as possible.

ARTHUR R. CASH, Group Secretary.
7, Nelson-gardens, Devonport.

PAISLEY AND DISTRICT HOSPITALS BOARD OF MANAGEMENT. The undernoted House Officer posts will become vacant on 1st February, 1953 :—

(1) HOUSE SURGEON for Orthopædic and Fracture Department of Royal Alexandra Infirmary. This is a busy unit and gives wide scope for practical work.

(2) HOUSE PHYSICIAN for Infectious Disease Unit at Paisley I.D. Hospital. The work here includes tuberculosis and thoracic surgery.

(3) HOUSE PHYSICIANS/SURGEONS for Royal Alexandra Infirmary Annexe. The work includes chronic medicine, general and minor surgery.

Applications should be submitted as early as possible to the Group Medical Superintendent, Royal Alexandra Infirmary, Paisley.

PENZANCE. WEST CORNWALL HOSPITAL. (General —100 Beds.) WEST CORNWALL HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners for the post of CASUALTY HOUSE SURGEON. Post now vacant.

Applications, stating age, nationality, qualifications, and experience, and enclosing copies of 2 recent testimonials, should be forwarded to the Hospital Secretary, West Cornwall Hospital, Penzance.

PONTYPRIDD (near). EAST GLAMORGAN HOSPITAL, CHURCH VILLAGE. (316 Beds—Committee's Base Hospital serving population of 177,000. Recognised for the D.Obst. R.C.O.G., D.C.H. and D.A.) PONTYPRIDD AND RHONDDA HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER (surgical), becoming vacant on 1st February, 1953.

Applications, stating age, qualifications and experience, together with copies of 2 recent testimonials, to be sent as soon as possible to the Group Secretary, Pontypridd and Rhondda Hospital Management Committee, Courthouse-street, Pontypridd.

PONTYPRIDD (near). EAST GLAMORGAN HOSPITAL, CHURCH VILLAGE. (316 Beds—Committee's Base Hospital serving population of 177,000. Recognised for the D.Obst. R.C.O.G., D.C.H. and D.A.) PONTYPRIDD AND RHONDDA HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of HOUSE OFFICER (obstetrics), becoming vacant on 18th February, 1953.

Applications, stating age, qualifications and experience, together with copies of 2 recent testimonials, to be sent as soon as possible to the Group Secretary, Pontypridd and Rhondda Hospital Management Committee, Courthouse-street, Pontypridd.

PONTYPRIDD (near). EAST GLAMORGAN HOSPITAL, CHURCH VILLAGE. (316 Beds—Committee's Base Hospital serving population of 177,000. Recognised for the D.Obst. R.C.O.G., D.C.H. and D.A.) PONTYPRIDD AND RHONDDA HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of HOUSE OFFICERS (surgical—first or second posts), becoming vacant on 1st February, 1953.

Applications, stating age, qualifications and experience, together with copies of 2 recent testimonials, to be sent as soon as possible to the Group Secretary, Pontypridd and Rhondda Hospital Management Committee, Courthouse-street, Pontypridd.

PONTYPRIDD (near). EAST GLAMORGAN HOSPITAL, CHURCH VILLAGE. (316 Beds—Committee's Base Hospital serving population of 177,000. Recognised for the D.Obst. R.C.O.G., D.C.H. and D.A.) PONTYPRIDD AND RHONDDA HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER (medical—first or second post), becoming vacant on 1st February, 1953.

Applications, stating age, qualifications and experience, together with copies of 2 recent testimonials, to be sent as soon as possible to the Group Secretary, Pontypridd and Rhondda Hospital Management Committee, Courthouse-street, Pontypridd.

PONTYPRIDD (near). EAST GLAMORGAN HOSPITAL, CHURCH VILLAGE. (316 Beds—Committee's Base Hospital serving population of 177,000. Recognised for the D.Obst. R.C.O.G., D.C.H. and D.A.) PONTYPRIDD AND RHONDDA HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER (anæsthetics), becoming vacant on 11th February, 1953.

Applications, stating age, qualifications, and experience, together with copies of 2 recent testimonials, to be sent as soon as possible to the Group Secretary, Pontypridd and Rhondda Hospital Management Committee, Courthouse-street, Pontypridd.

PONTYPRIDD (near). EAST GLAMORGAN HOSPITAL, CHURCH VILLAGE. (316 Beds—Committee's Base Hospital serving population of 177,000. Recognised for the D.Obst. R.C.O.G., D.C.H. and D.A.) PONTYPRIDD AND RHONDDA HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the posts of HOUSE OFFICERS (pædiatrics—first or second posts), becoming vacant on 1st February, 1953.

Applications, stating age, qualifications and experience, together with copies of 2 recent testimonials, to be sent as soon as possible to the Group Secretary, Pontypridd and Rhondda Hospital Management Committee, Courthouse-street, Pontypridd.

PORTSMOUTH GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the following appointment :—

Saint Mary's Hospital (773 Beds)

PÆDIATRIC HOUSE PHYSICIAN, vacant 12th January, 1953. There is a Pædiatric Unit of 53 Beds, together with responsibility for 60 neonatal cots, and the post is recognised for candidates preparing for the D.C.H.

Applications, stating age, experience, and qualifications, and names of 2 referees, should be submitted as soon as possible to E. H. HURST.
35, Grove-road South, Southsea.

PORTSMOUTH GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the following appointments :—

Saint Mary's Hospital (general hospital with 150 acute surgical beds and 74 acute medical beds) which is recognised for the F.R.C.S.

1 SENIOR HOUSE PHYSICIAN, vacant 26th February, 1953.
3 HOUSE PHYSICIANS, vacant now, 31st January, and 6th February.
3 HOUSE SURGEONS, vacant 28th January, 3rd and 15th February.

Royal Portsmouth Hospital (60 medical and 70 surgical beds)

1 HOUSE PHYSICIAN.
2 HOUSE SURGEONS, vacant now and 16th February.

Queen Alexandra Hospital (62 medical beds)

1 SENIOR HOUSE PHYSICIAN, vacant now.

Chest Services (160 Beds)

1 HOUSE PHYSICIAN, vacant now.

Applications, stating age, experience, and qualifications, and names of 2 referees, should be submitted as soon as possible to—35, Grove-road South, Southsea. E. H. HURST.

PRESTWICH HOSPITAL, Prestwich, near Manchester. (Psychiatric—3018 Beds.) Applications are invited from registered medical practitioners (Male or Female) for the appointment of JUNIOR HOSPITAL MEDICAL OFFICER or SENIOR HOUSE OFFICER. Full residential accommodation is available for a single person and rooms at a reasonable rental are available for a married couple. All modern treatments are practised and facilities will be given for studies for higher qualifications.

Applications, giving full details of age, training, and experience, together with the names and addresses of at least 2 referees, should be sent to the Medical Superintendent not later than Saturday, 24th January, 1953.

POOLE GENERAL HOSPITAL, Poole, Dorset. BOURNEMOUTH AND EAST DORSET HOSPITAL MANAGEMENT COMMITTEE. HOUSE SURGEON required immediately. The Hospital is recognised for the F.R.C.S. and F.R.C.S.E.

Applications to the Hospital Secretary at the Hospital.

READING. ROYAL BERKSHIRE HOSPITAL (403 Beds) and BATTLE HOSPITAL (340 Beds). Applications are invited from registered medical practitioners for the post of RESIDENT HOUSE SURGEON (Accident and Orthopædic Department), vacant 1st February, 1953, for periods of 6 months. Also casualty duties.

Apply, stating age, nationality, qualifications with dates, present post, together with copies of 3 recent testimonials, to Hospital Assistant Secretary, Royal Berkshire Hospital.

RETFORD (near). RAMPTON HOSPITAL. Board of Control. Applications are invited for the post of SENIOR REGISTRAR at Rampton Hospital, near Retford, Nottinghamshire (1143 Beds). The Hospital accommodates patients exhibiting conduct disorders with mental deficiency and provides excellent opportunities for the study, treatment and training of behaviour disorders of all kinds and degrees. Applicants must be registered medical practitioners and possession of the Diploma in Psychological Medicine would be an advantage. The appointment will be on National Health Service terms and conditions of service and subject to National Health Service superannuation regulations. A house (with garage) on the Hospital estate will be provided at an appropriate charge.

Applications, stating name, date and place of birth, nationality, details of education, professional qualifications, war service (if any), and present and previous appointments, with names and addresses of 3 referees, should reach the Medical Superintendent, Rampton Hospital, Retford, Nottinghamshire, not later than 30th January, 1953. Envelopes enclosing applications should be clearly marked A/SR. Canvassing in any form will lead to disqualification, but possible candidates may visit the Hospital by direct appointment with the Medical Superintendent.

ROCHDALE INFIRMARY. Rochdale and District Hospital MANAGEMENT COMMITTEE. SENIOR HOUSE OFFICER (orthopædics). Post recognised for 6 months for F.R.C.S. examination.

Apply at once to S. HODKINSON, Group Secretary.
Central Offices, Birch Hill Hospital, Rochdale.

ROCHDALE INFIRMARY. Rochdale and District Hospital MANAGEMENT COMMITTEE. HOUSE SURGEON. Post recognised for 6 months for F.R.C.S. examination.

Apply at once to S. HODKINSON, Group Secretary.
Central Offices, Birch Hill Hospital, Rochdale.

ROMFORD, ESSEX. OLDCHURCH HOSPITAL. (722 Beds.) Applications are invited from registered medical practitioners for the post of HOUSE PHYSICIAN (neurosurgery), vacant from 25th February, 1953. Resident post, tenable for 6 months. Would be suitable for candidate seeking a higher qualification as it offers excellent experience in neurology.

Applications, stating age, nationality, qualifications with dates, and experience, together with copies of 2 recent testimonials, or names of 2 referees, should be sent immediately to the Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital, Romford.

ROMFORD, ESSEX. OLDCHURCH HOSPITAL. (722 Beds.) Applications are invited from registered medical practitioners for the post of HOUSE OFFICER (resident—obstetrics and gynæcology), vacant from 18th February, 1953, in the Obstetric and Gynæcological Unit, consisting of 88 obstetric beds and 52 gynæcological beds. Post tenable for 6 months is recognised for D.Obst. R.C.O.G. and M.R.C.O.G.

Applications, stating age, nationality, qualifications with dates, present appointment and experience, and 2 recent testimonials or names of 2 referees, should be forwarded immediately to the Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital, Romford.

ROMFORD, ESSEX. OLDCHURCH HOSPITAL. (722 Beds.) Applications are invited from registered medical practitioners for the post of ORTHOPÆDIC HOUSE SURGEON (resident) in the Orthopædic and Accident Unit. The service consists of 100 Beds equally divided between traumatic surgery and "cold" orthopædics. The post, tenable for 6 months, is recognised under F.R.C.S. regulations.

Applications, stating age, nationality, qualifications with dates, present appointment and experience, and 2 recent testimonials or names of 2 referees, should be forwarded immediately to the Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital, Romford.

ROMFORD, ESSEX. OLDCHURCH HOSPITAL. (722 Beds.) Applications are invited from registered medical practitioners for the appointment of HOUSE PHYSICIAN (resident), vacant from 18th February, 1953. Post tenable for 6 months.

Applications, stating age, nationality, qualifications with dates, and experience, together with copies of 2 recent testimonials, or names of 2 referees, should be sent immediately to the Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital, Romford.

ROMFORD, ESSEX. RUSH GREEN HOSPITAL. (247 Beds.) Applications are invited from registered medical practitioners (Male) for the post of RESIDENT HOUSE OFFICER (general surgery) at the above Hospital, vacant from 25th January, 1953. 6 months appointment. Post is recognised for F.R.C.S.

Applications, stating age, nationality, qualifications with dates and experience, together with copies of 2 recent testimonials or names of 2 referees, should be addressed immediately to the Medical Superintendent.

ROMFORD, ESSEX. RUSH GREEN HOSPITAL. (247 Beds.) Applications are invited from registered medical practitioners for the post of RESIDENT SENIOR HOUSE OFFICER (anæsthetics) at the above Hospital. Good experience in anæsthetics for general surgery, gynæcology, and E.N.T. Over 2200 operations were performed in 1951. Modern equipment.

Applications, stating age, nationality, qualifications with dates, present appointment, and experience, should be forwarded to the Group Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital, Romford, as soon as possible. Applicants may see the Hospital by arrangement with the Medical Superintendent. Telephone No. Romford 7711.

ROMFORD, ESSEX. VICTORIA HOSPITAL. (91 Beds.) Applications are invited from registered medical practitioners (Male) for the post of RESIDENT HOUSE PHYSICIAN vacant from 1st March, 1953. The duties will include experience in gynæcology. 6 months appointment.

Applications, stating age, nationality, qualifications with dates, and experience, together with copies of 2 recent testimonials or names of 2 referees, should be sent immediately to the Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital, Romford.

ROMFORD, ESSEX. VICTORIA HOSPITAL. (91 Beds.) Applications are invited from registered medical practitioners (Male) for the post of RESIDENT HOUSE SURGEON, vacant from 6th March, 1953. 6 months appointment.

Applications, stating age, nationality, qualifications with dates, and experience, together with copies of 2 recent testimonials or names of 2 referees, should be sent immediately to the Secretary, Romford Group Hospital Management Committee, Oldchurch Hospital, Romford.

ROSSETT. TREVALYN MANOR MATERNITY HOSPITAL. (45 Beds.) WREXHAM, POWYS AND MAWDDACH HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from registered medical practitioners, preferably Female, for the post of OBSTETRIC HOUSE SURGEON at the above Hospital, to commence 1st February, 1953. Salary will be at the rate of £350–£450 p.a., according to experience, less £100 for full residential emoluments. The appointment will, in the first instance, be for 6 months. Successful applicant will assist and deputise for the Medical Officer.

Applications, giving age, nationality, qualifications and experience, accompanied by copies of 2 recent testimonials, should be forwarded to—

WILLIAM JONES, Group Secretary, Wrexham,
Powys and Mawddach Hospital Management Committee.
Maelor General Hospital, Croesnewydd-road, Wrexham.

RHONDDA. PORTH AND DISTRICT HOSPITAL. (110 Beds. This Hospital is visited regularly by Consultants from the Cardiff Royal Infirmary.) PONTYPRIDD AND RHONDDA HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of HOUSE OFFICER (first or second post—surgical and casualty).

Applications, stating age, qualifications and experience, together with copies of 2 recent testimonials, to be sent as soon as possible to the Secretary, Pontypridd and Rhondda Hospital Management Committee, Courthouse-street, Pontypridd.

SWANSEA HOSPITAL. (403 Beds.) Glantawe Hospital MANAGEMENT COMMITTEE. Registered medical practitioners are invited to apply for the resident appointment of SENIOR HOUSE OFFICER in the Surgical Unit of the above Hospital.

Applications, stating age, qualifications and experience, should be forwarded to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
Swansea Hospital, St. Helen's-road, Swansea.

SWANSEA HOSPITAL. (403 Beds.) Glantawe Hospital MANAGEMENT COMMITTEE. Registered medical practitioners are invited to apply for the non-resident appointment of SENIOR HOUSE OFFICER in the Ophthalmic Department of Swansea Hospital. The post is recognised for the F.R.C.S.(Eng.), and D.O. examination.

Applications, stating age, qualifications and experience, should be addressed to—

O. C. HOWELLS, Secretary,
Glantawe Hospital Management Committee.
St. Helen's-road, Swansea.

SALISBURY GENERAL HOSPITAL. Applications are invited for the appointment of RESIDENT HOUSE PHYSICIAN for a period of 6 months from 21st February, 1953.

Apply, naming 2 referees, to Group Secretary, Salisbury Group Hospital Management Committee, Odstock Hospital, Salisbury.

SALISBURY GENERAL HOSPITAL. Applications are invited for the appointment of RESIDENT HOUSE SURGEON for a period of 6 months from 28th February, 1953.

Apply, naming 2 referees, to Group Secretary, Salisbury Group Hospital Management Committee, Odstock Hospital, Salisbury.

SCOTLAND. WESTERN REGIONAL HOSPITAL BOARD. Applications are invited from suitably qualified medical practitioners for the appointments of 2 REGISTRARS in Obstetrics and Gynæcology, 1 with duties at the Royal Maternity Hospital, Glasgow, and the Western Infirmary, Glasgow, and the other with duties at the Royal Maternity Hospital, Glasgow, and Glasgow Royal Infirmary, which will be for 1 year in the first instance. The above appointments will be subject to the National Health Service (Scotland) superannuation regulations.

Applications (12 copies), stating date of birth, qualifications and experience, and present appointment, and giving the names of 3 referees, should be submitted not later than 2nd February, 1953, to the Secretary, Western Regional Hospital Board 64, West Regent-street, Glasgow, C.2.

SCOTLAND. NORTHERN REGIONAL HOSPITAL BOARD. Applications are invited for the whole-time post of SENIOR REGISTRAR in Anæsthetics. Duties mainly at Royal Northern Infirmary and Raigmore Hospital, Inverness, where accommodation for a single Officer is available.

Forms of application and further particulars may be obtained from the undersigned, with whom applications should be lodged by Saturday, 7th February, 1953.

A. M. FRASER, M.D.,
Secretary and Administrative Medical Officer.
Office of the Northern Regional Hospital Board,
Raigmore, Inverness.

SCOTLAND. NORTHERN REGIONAL HOSPITAL BOARD. Applications are invited for the whole-time non-resident post of SURGICAL REGISTRAR to the Inverness Hospitals.

Further particulars and application schedules can be obtained from the undersigned, with whom applications should be lodged by 27th January, 1953.

A. M. FRASER, M.D.,
Secretary and Administrative Medical Officer.
Office of the Northern Regional Hospital Board,
Raigmore, Inverness.

SCOTLAND. NORTHERN REGIONAL HOSPITAL BOARD. Applications are invited for a whole-time post of MEDICAL REGISTRAR at the Inverness Hospitals. The duties are mainly at the Royal Northern Infirmary, Inverness.

Schedules of application and further particulars are obtainable from the undersigned, with whom applications should be lodged by 7th February, 1953.

A. M. FRASER, M.D.,
Secretary and Administrative Medical Officer.
Office of the Northern Regional Hospital Board,
Raigmore, Inverness.

SCUNTHORPE AND DISTRICT WAR MEMORIAL HOSPITAL. SHEFFIELD REGIONAL HOSPITAL BOARD. Applications are invited from registered medical practitioners for the resident whole-time post of REGISTRAR (orthopædics) to the above Hospital. The appointment is for 1 year in the first instance and may be renewed for a further year.

Applications, giving age, nationality, qualifications, present and previous appointments with dates, together with names and addresses of 3 referees, should be sent to the Secretary, Sheffield Regional Hospital Board, Fulwood House, Old Fulwood-road, Sheffield, 10, to arrive not later than 2nd February, 1953.

SHEFFIELD. CITY GENERAL HOSPITAL. Sheffield REGIONAL HOSPITAL BOARD. Applications are invited from registered medical practitioners for the resident whole-time post of REGISTRAR (psychiatry) to the above Hospital, which is a recognised training hospital for the D.P.M. The appointment is for 1 year in the first instance and may be renewed for a further year.

Applications, giving age, nationality, qualifications, present and previous appointments with dates, together with names and addresses of 3 referees, should be sent to the Secretary, Sheffield Regional Hospital Board, Fulwood House, Old Fulwood-road, Sheffield, 10, to arrive not later than 2nd February, 1953.

SHEFFIELD. KING EDWARD VII ORTHOPÆDIC HOSPITAL, Rivelin Valley-road, SHEFFIELD, 6. (140 Beds.) SHEFFIELD REGIONAL HOSPITAL BOARD. SHEFFIELD NO. 3 HOSPITAL MANAGEMENT COMMITTEE. Applications are invited from Male or Female practitioners for the appointment of HOUSE SURGEON or SENIOR HOUSE OFFICER (according to experience), resident or non-resident. The Hospital has at present a complement of 140 Beds, of which 100 are occupied by children. The post would involve a fair amount of medical work as well as orthopædics. Salary £670 p.a., less authorised deductions in respect of residential emoluments.

Applications, stating age, qualifications and experience, with names of 2 referees, should be addressed to the Group Secretary, Sheffield No. 3 Hospital Management Committee, Lodge Moor Hospital, Sheffield, 10.

SHEFFIELD. THE UNITED SHEFFIELD HOSPITALS. ROYAL INFIRMARY UNIT. Applications are invited for the post of SENIOR ORTHOPÆDIC REGISTRAR at the above Hospital.

Applications, stating age, qualifications, and experience, with the names of 3 referees, to be sent to the Chief Administrative Officer, The United Sheffield Hospitals, West-street, Sheffield, 1, not later than 21st January, 1953.

SHEFFIELD REGIONAL HOSPITAL BOARD. Applications are invited from registered medical practitioners possessing the Diploma in Anæsthetics for the non-resident whole-time post of SENIOR ANÆSTHETIC REGISTRAR at the City General Hospital, Sheffield, where there is a Department of Thoracic Surgery, a Regional Cardiological Centre and a Professorial Gynæcological Unit. The appointment is for 1 year in the first instance, reviewable annually. It has been agreed between the Sheffield Regional Hospital Board and the Board of Governors of the United Sheffield Hospitals that the tenure of appointment will be divided between the City General Hospital, Sheffield, and the Teaching Hospitals.

Applications, giving age, nationality, qualifications, present and previous appointments with dates, together with names and addresses of 3 referees, should be sent to the Secretary, Sheffield Regional Hospital Board, Fulwood House, Old Fulwood-road, Sheffield, 10, to arrive not later than 7th February, 1953.

SHREWSBURY. EYE, EAR AND THROAT HOSPITAL. (70 Beds.) SHREWSBURY GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER (E.N.T.) at the Eye, Ear and Throat Hospital, Shrewsbury. Post recognised for the D.L.O. R.C.S. and vacant immediately.

Applications, stating age, qualifications, nationality, and experience, together with copies of recent testimonials, should be sent to J. P. MALLETT, Group Secretary.

Royal Salop Infirmary, Shrewsbury, 15th October, 1952.

SHREWSBURY. ROYAL SALOP INFIRMARY AND COPTHORNE HOSPITAL. (500 Beds.) Applications are invited for the post of GYNÆCOLOGICAL HOUSE SURGEON (Male or Female). There are 50 gynæcological beds and 2 House Surgeons. The post is recognised for the M.R.C.O.G.

Applications, stating age, qualifications, nationality and experience, accompanied by copy testimonials, should be sent to the Secretary, Group 15 Hospital Management Committee, Royal Salop Infirmary, Shrewsbury.

J. P. MALLETT, Group Secretary,
Shrewsbury Group Hospital Management Committee.
Royal Salop Infirmary, Shrewsbury, 17th November, 1952.

SHREWSBURY. ROYAL SALOP INFIRMARY AND COPTHORNE HOSPITAL. (500 Beds.) Applications are invited for the post of RESIDENT ANÆSTHETIST (House Officer grade), vacant mid-January, 1953. Post recognised for the D.A.

Applications, stating age, nationality, qualifications, and previous hospital appointments, together with copies of recent testimonials, should be sent to—

J. P. MALLETT, Group Secretary,
Shrewsbury Group Hospital Management Committee.
Royal Salop Infirmary, Shrewsbury, 16th December, 1952.

SOUTHAMPTON GENERAL HOSPITAL. (80 surgical beds.) HOUSE SURGEON (resident) required end of January. Post recognised for F.R.C.S. and tenable for 6 months.

Applications, with copies of testimonials, should be forwarded as soon as possible to the Group Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHAMPTON GENERAL HOSPITAL. 2 House SURGEONS (resident) required mid-February, 1953, in Obstetric and Gynæcological Unit. Posts recognised for the Diploma and Membership examinations of the R.C.O.G. Tenable for 6 months.

Applications, with copies of testimonials, to be forwarded as soon as possible to the Group Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHAMPTON. ROYAL SOUTH HANTS HOSPITAL. (280 Beds—Recognised for F.R.C.S.) HOUSE SURGEON (resident) required mid-January. Post tenable 6 months.

Applications, with copies of recent testimonials, should be forwarded as soon as possible to the Group Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

SOUTHAMPTON. ROYAL SOUTH HANTS HOSPITAL (280 Beds), AND SOUTHAMPTON GENERAL HOSPITAL (471 Beds). SENIOR HOUSE OFFICER (E.N.T.) required immediately. Post recognised for the F.R.C.S. (Eng.) and D.L.O. examinations and provides experience in all branches of E.N.T. work, including audiometry. The Group includes a diagnostic and distributing hearing-aid centre.

Applications, with copies of recent testimonials, should be forwarded as soon as possible to the Secretary, Southampton Group Hospital Management Committee, Bullar-street, Southampton.

STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of RESIDENT ASSISTANT CLINICAL PATHOLOGIST to the Stoke-on-Trent Group of hospitals. The post is of Junior Hospital Medical Officer status, but applicants with less than the qualifying 2 years registration period will be considered, in the grade of Senior Hospital Officer. The laboratory is recognised for the Diploma in Clinical Pathology and also for the Diploma in Pathology, and the post offers excellent experience in hospital laboratory work.

Applications, giving full details of previous experience, age, and nationality, together with copies of 2 testimonials, should be forwarded forthwith to the Group Secretary, Stoke-on-Trent Hospital Management Committee, Princes-road, Stoke-on-Trent.

STOKE-ON-TRENT. CITY GENERAL HOSPITAL. STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of HOUSE OFFICER (general surgery). 3 posts vacant on 31st January, 1953. Posts recognised for the F.R.C.S. examination. Posts recognised for experience during pre-registration period.

Apply, with copy testimonials, stating age, nationality, and full details of previous services, to the Group Secretary, Hospital Management Committee, Princes-road, Stoke-on-Trent.

STOKE-ON-TRENT. CITY GENERAL HOSPITAL. STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of HOUSE OFFICER (paediatrics), post vacant 31st January, 1953. Post recognised for D.C.H. examination. Post recognised for experience during pre-registration period.

Apply, with copy testimonials, stating age, nationality, and full details of previous service, to the Group Secretary, Hospital Management Committee, Princes-road, Stoke-on-Trent.

STOKE-ON-TRENT. CITY GENERAL HOSPITAL. STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of HOUSE OFFICER (medical). 3 posts vacant on 31st January, 1953. Posts recognised for experience during pre-registration period.

Apply, with copy testimonials, stating age, nationality and full details of previous service, to the Group Secretary, Hospital Management Committee, Princes-road, Stoke-on-Trent.

STOKE-ON-TRENT. NORTH STAFFS ROYAL INFIRMARY. STOKE-ON-TRENT HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER (ophthalmics). Recognised for D.O.M.S. and F.R.C.S.

Apply, with copy testimonials, stating age, nationality, and full details of previous service, to the Group Secretary, Hospital Management Committee, Princes-road, Stoke-on-Trent.

SHOREHAM-BY-SEA. SOUTHLANDS HOSPITAL. Required, RESIDENT HOUSE SURGEON, pre-registration or registered practitioner. Post recognised by R.C.S. for Fellowship; vacant 12th February, 1953. Salary and conditions in accordance with national scale. This post is recognised as pre-registered under the Medical Act.

Application forms to be obtained from, and returned as soon as possible to, Surgeon-Superintendent, Southlands Hospital, Shoreham-by-Sea.

A. V. OAKTON, Group Secretary,
Worthing Group Hospital Management Committee.

SLOUGH. UPTON HOSPITAL. (213 Beds—General and Midwifery.) Application is invited for the post of SENIOR HOUSE OFFICER (Department of Obstetrics and Gynæcology). Preference will be given to applicants who have had previous experience in a general medical or surgical appointment. The post is resident and becomes vacant on 12th February and is for 1 year.

Applications, stating age, qualifications, and previous experience, together with copies of 2 recent testimonials, should reach the Hospital Secretary not later than 31st January, 1953.

STOCKPORT INFIRMARY, Stockport. Applications are invited for the post of HOUSE OFFICER (general surgery and gynæcology). Female applicants will receive prior consideration.

Applications, stating age, qualifications and experience, together with copies of 2 testimonials, or the names of 2 referees, to be forwarded to the undersigned, immediately.

H. G. PRICE, Secretary,
Stockport and Buxton Hospital Management Committee.
59B, Shaw-heath, Stockport, Cheshire, 8th January, 1953.

ST. ALBANS CITY HOSPITAL, Normandy-road, ST. ALBANS, HERTS. Locum SENIOR REGISTRAR required immediately for an indefinite period to the Department of Morbid Anatomy at the above Hospital. Salary according to rates for locum tenens under the terms and conditions of hospital medical and dental staffs (England and Wales).

Applications, giving age, qualifications, and experience, together with the names of 2 referees, should be forwarded to the Group Secretary, St. Albans City Hospital, Normandy-road, St. Albans.

ST. ALBANS CITY HOSPITAL. (382 Beds.) Mid Herts GROUP HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the appointment of HOUSE SURGEON (House Officer grade) for 1 of the 2 general surgical teams. (Recognised for the F.R.C.S.) Duties will include responsibility for cases under the care of the Consultant Orthopædic Surgeon. Post vacant now. Preference will be given to candidates seeking pre-registration posts under the Medical Act, 1950.

Applications, together with the names of 2 referees, should be forwarded immediately to the Group Secretary, St. Albans City Hospital, Normandy-road, St. Albans, Herts.

STAFFORD HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for the post of SENIOR HOUSE OFFICER (anæsthetics), Male or Female, resident or non-resident. Duties mainly at the General Infirmary, Stafford, which is the main and acute general hospital of the Group. Senior House Officer terms and conditions of service with salary £670 p.a. If resident a deduction will be made from salary in respect of residential emoluments.

Applications should be sent as soon as possible to—

H. H. JONES, Secretary to the Committee.

13, Foregate-street, Stafford.

TRURO. ROYAL CORNWALL INFIRMARY. (General Hospital—212 Beds; 9 Residents.) WEST CORNWALL HOSPITAL MANAGEMENT COMMITTEE. Applications are invited for HOUSE SURGEON for General Surgery and Gynæcology (Male or Female). Post now vacant. The successful candidate will be responsible jointly with the House Surgeon for the 66 Beds allocated to the 2 specialties. Salary and conditions of service in accordance with the terms laid down by the Ministry of Health.

Applications, stating age, qualifications, and experience, and enclosing copies of 2 recent testimonials, should be sent to the Hospital Secretary, Royal Cornwall Infirmary, Truro, Cornwall.

TAUNTON HOSPITAL MANAGEMENT COMMITTEE. TAUNTON AND SOMERSET HOSPITAL. Applications are invited for the post of HOUSE SURGEON (general surgery). Post recognised for F.R.C.S.

Applications, stating age, qualifications, with dates, and nationality, together with 2 recent testimonials, should be sent immediately to the Secretary, Musgrove Park Hospital, Taunton.

TAUNTON AND SOMERSET HOSPITAL. Applications are invited from registered medical practitioners for the post of SENIOR HOUSE OFFICER (casualty and orthopædic).

Applications, stating age, qualifications with dates, nationality, details of experience, together with 2 recent testimonials, to be sent immediately to the Secretary, Taunton Hospital Management Committee, Musgrove Park Hospital, Taunton, Somerset.

WARRINGTON (near). WINWICK HOSPITAL.

JUNIOR HOSPITAL MEDICAL OFFICER. Salary £700–£50–£1000 p.a.

2 SENIOR HOUSE OFFICERS. Salary £670 p.a.

with a charge of £180 p.a. for full board-residence in both instances. All modern methods of treatment of mental illness and nervous disorders are available in this hospital of 2200 Beds which is recognised for training for the D.P.M. Appointments subject to the terms and conditions of hospital medical and dental staffs.

Applications, with full details of qualifications, experience, &c., and names and addresses of 2 referees, to be sent to the Medical Superintendent as soon as possible.

WARRINGTON GENERAL HOSPITAL. (368 Beds.) HOUSE SURGEON (Male or Female), vacancy at the end of January for a House Surgeon (pre-registration post) at the above Hospital. National Health Service terms and conditions. The staffing of the Surgical Unit consists of a Senior Registrar, Senior House Officer, and 2 House Surgeons. The post offers a comprehensive training in surgery.

Apply, giving full particulars, to—

H. L. BOOT, Group Secretary,
Warrington and District Hospital Management Committee,
c/o General Hospital, Warrington, Lancs.

WEST BROMWICH AND DISTRICT GENERAL HOSPITAL, Edward-street, WEST BROMWICH. (144 Beds.) Applications are invited for the post of HOUSE SURGEON (first second, or third post). Range of salary £350–£450 p.a. according to experience, with deduction of £100 p.a. in respect of board and lodging. The post is tenable for 6 months.

Applications, together with 3 recent testimonials, should be submitted to—

JOHN O. ROBINS, Secretary, West Bromwich and
District Hospitals Management Committee Group (18).

WESTON-SUPER-MARE GENERAL HOSPITAL. (110 Beds.) Applications are invited from registered medical practitioners for the resident appointments of 2 HOUSE SURGEONS (first, second, or third posts), vacant 1st March, 1953. The appointments will be for a period of 6 months in the first instance and may be renewed for a further 6 months.

Applications, stating age, qualifications, and experience, together with names and addresses of 2 referees, should be addressed to the Secretary, Weston-super-Mare Hospital Management Committee.

WELSH REGIONAL HOSPITAL BOARD. Applications are invited for the appointment of a REGISTRAR in General Surgery to serve the Clwyd and Deeside Hospital Management Committee. The successful candidate will be based at the Royal Alexandra Hospital, Rhyl (150 Beds). The post will be subject to review at the end of the first year.

Forms of application to be obtained from the Senior Administrative Medical Officer, Welsh Regional Hospital Board, Cathays Park, Cardiff, within 14 days of appearance of this advertisement.

WEYMOUTH AND DISTRICT HOSPITAL. (124 Beds.) HOUSE SURGEON required, Male or Female, post vacant early January, 1953, and tenable for 6 months.

Applications, giving details of age, experience, qualifications, and nationality, together with copies of testimonials, to the Group Secretary, West Dorset Group Hospital Management Committee, Damers-road, Dorchester, Dorset, immediately.

WINCHESTER. ROYAL HAMPSHIRE COUNTY HOSPITAL. SENIOR HOUSE OFFICER (orthopædics) required, vacant 21st January, 1953. Appointment will be for 6 months in the first instance. Salary £670 p.a., less £150 for board and residence.

Applications, with copies of 2 testimonials, should be sent to the Secretary.

WINDSOR. KING EDWARD VII HOSPITAL. House SURGEON in General Surgery required, Male or Female, for post vacant 28th February. Post recognised for F.R.C.S. Preference will be given to persons seeking a pre-registration House Officer post under the Medical Act, 1950. Salary on national scale.

Applications, stating age, qualifications with dates, and nationality, together with copies of recent testimonials, should be sent to the Hospital Secretary within 14 days.

WORTHING GROUP HOSPITAL MANAGEMENT COMMITTEE. WORTHING HOSPITAL, Lyndhurst-road, WORTHING, SUSSEX. (272 Beds—5 Resident Officers.) Applications are invited from registered medical practitioners for post of HOUSE SURGEON for special departments (new appointment). Accommodation available for male or female staff. R practitioners within 3 months of qualification or holding a first post may apply. Salary £350–£450 according to experience, less £100 p.a. for board, lodging, &c. Appointment subject to conditions of service for the National Health Service.

Apply to Hospital Secretary, Worthing Hospital, stating age, qualifications with dates, nationality, and details of experience, together with copies of 2 recent testimonials.

A. V. OAKTON, Group Secretary.

WORKSOP, NOTTS. VICTORIA HOSPITAL. (127 surgical beds.) HOUSE SURGEON required immediately, duties include Orthopædic and E.N.T. Departments. Appointment for 6 months in first instance. Salary £350–£450 according to experience, less deduction of £100 p.a. residential emoluments.

Applications, stating age, qualifications, nationality, together with copies of recent testimonials, to be forwarded to the Secretary, Worksop and Retford Hospital Management Committee, Victoria Hospital, Worksop, Notts.

WOLVERHAMPTON HOSPITAL MANAGEMENT COMMITTEE GROUP NO. 16, BIRMINGHAM REGION.

The Royal Hospital, Wolverhampton (an Associated Hospital of the University of Birmingham Medical School)

HOUSE OFFICER (Ear, Throat and Nose Department), vacant now. Salary £450 p.a.

SENIOR HOUSE OFFICER or HOUSE OFFICER (Fracture and Orthopædic Department), vacant now.

HOUSE OFFICER (general surgery), vacant 26th January.

HOUSE OFFICER (general surgery), vacant 13th February.

HOUSE OFFICER (anæsthetics), vacant 27th January. Appointment recognised for D.A.

Wolverhampton and Midland Counties Eye Infirmary

HOUSE OFFICER, vacant now. Appointment recognised for F.R.C.S. and D.O. examinations.

New Cross Hospital, Wolverhampton

HOUSE OFFICER (general surgery), vacant now.

Applications, with copies of 3 recent testimonials, to be sent to W. COCKBURN, Group Secretary.

The Royal Hospital, Wolverhampton.

YORKSHIRE. EAST RIDING HOSPITAL MANAGEMENT COMMITTEE.

East Riding General Hospital, Driffield, Yorks

(*a*) SENIOR HOUSE PHYSICIAN, vacant now. Would suit applicant reading for higher degree.

(*b*) HOUSE PHYSICIAN (first, second, or third post), vacant now. Duties to include medical wards, casualty and some anæsthetics. Good general experience for first House appointment.

Northfield Sanatorium, Driffield, Yorks

(*c*) HOUSE PHYSICIAN (first, second, or third post), vacant now. Sanatorium has 78 Beds for adults.

Westwood Hospital, Beverley, Yorks

(*d*) RESIDENT PATHOLOGIST (Senior House Officer), in Area Laboratory with attendance at Branch Laboratory, Driffield. Post vacant shortly. Offers experience in all branches of pathology.

Salary for (*a*) and (*d*) is £670 p.a., for (*b*) and (*c*) is £350–£450 according to previous posts held.

Detailed applications to Secretary, Westwood Hospital, Beverley, Yorks.

NORTHERN IRELAND HOSPITALS AUTHORITY invite applications for a whole-time post as REGISTRAR or SENIOR HOUSE OFFICER in General Medicine at hospitals managed by the South Belfast Hospital Management Committee and for a whole-time post as JUNIOR TUTOR/SENIOR HOUSE OFFICER in General Medicine at hospitals managed by the Belfast Hospital Management Committee. The first-named appointment may be as Senior House Officer or Senior or Principal Registrar, the analogous grades in Great Britain being Senior House Officer, Registrar and Senior Registrar respectively.

Applications should be made on a form which may be obtained (with further particulars) from the Secretary, Northern Ireland Hospitals Authority, Friends' Provident Building, 58, Howard-street, Belfast, and which must be returned so as to be received not later than 22nd January, 1953.

NORTHERN IRELAND TUBERCULOSIS AUTHORITY. WHITEABBEY HOSPITAL, CO. ANTRIM. Applications are invited for resident posts of SENIOR HOUSE OFFICER and HOUSE OFFICER at the above-named Hospital. The Hospital contains 350 Beds for the treatment of pulmonary tuberculosis and has a modern Thoracic Surgery Unit. Salary in accordance with national terms and conditions of service for hospital medical staff.

Applications, stating age, qualifications and experience, together with the names of 2 referees, should be lodged immediately with the Secretary, Northern Ireland Tuberculosis Authority, 27, Adelaide-street, Belfast.

NEW YORK CITY. State University of New York College of Medicine at New York City in affiliation with Kings County Hospital now offers a 2-year RESIDENCY in Anesthesiology.

For further information write to MEREL H. HARMEL, M.D.
Kings County Hospital, 451, Clarkson-avenue,
Brooklyn, N.Y.

NEW YORK. ALBANY HOSPITAL. Approved Internship, ASSISTANT RESIDENCY, and RESIDENCY in E.N.T. available 1st July, 1953, in Albany Hospital, affiliated with Albany Medical College. Salary $1020–$2120. Room, uniforms, and laundry supplied.

Inquire, Medical Director, Albany Hospital, Albany, New York, U.S.A.

NEW YORK. ALBANY HOSPITAL. Internships and RESIDENCIES available in 750-Bed, general, private Hospital, directly connected to Albany Medical College. Approved for all major specialties, including psychiatry, and accepted by the U.S. State Department as member of Exchange Visitor Program. Annual salary range is $1020 for Intern to $2120 for Resident, with laundry, uniforms, room, and annual vacation furnished. All appointments begin July, 1953.

Address inquiries to Medical Director, Albany Hospital, Albany, New York.

NEW YORK. NEW ROCHELLE HOSPITAL, New ROCHELLE, NEW YORK, U.S.A. (360 Bed general community hospital.) Approved by American College of Surgeons; American Medical Association for Internship and Residency training. Only graduates from approved university schools accepted. INTERNES, vacancies commencing on or about 1st July, 1953. Remuneration $100 per month plus full maintenance. Upon completion of 1 years Internership, passage back to England will be paid by Hospital.

Apply Superintendent.

PENNSYLVANIA. MERCY HOSPITAL. Radiology RESIDENCY available 1st July, approved 3 years. 750-Bed hospital affiliated with medical school. Salary $150 per month with maintenance.

Apply to C. R. PERRYMAN, M.D.
Mercy Hospital, Pittsburgh 19, Pa.

NEW ZEALAND. THE OTAGO HOSPITAL BOARD. DUNEDIN HOSPITAL AND UNIVERSITY OF OTAGO, N.Z. Applications are invited for the position of ANÆSTHETIC REGISTRAR (Senior) Dunedin Hospital. Salary scale according to Hospital Employment (Medical Officers) Regulations, 1952 —£833 15s.–£948 15s. p.a., plus £179 8s. p.a. where the appointee is living out. Further particulars and conditions of appointment may be obtained from the High Commissioner for New Zealand, 415, The Strand, London, W.C.2 or THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Applications, stating age, qualifications, and experience, together with testimonials and a certificate of health and radiological certificate, will be received by the undersigned until Tuesday, 10th February, 1953.

W. A. WILLIAMSON, Secretary

P.O. Box 453, Dunedin, New Zealand.

Public Appointments

BARNSLEY. COUNTY BOROUGH OF BARNSLEY. PUBLIC HEALTH DEPARTMENT. Applications are invited from registered medical practitioners for the whole-time appointment of ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOLS MEDICAL OFFICER. The salary payable will be in accordance with the scale £850 p.a., rising by annual increments of £50 to £1150. The duties will be concerned principally with Child Health in the School and Maternity and Child Welfare Services. Possession of a D.P.H. will be an advantage. Applications will be considered from candidates who undertake the proposed part-time course for the D.P.H. at Leeds University or who are pursuing an approved part-time course for a higher degree. In such case the successful candidate would be granted leave of absence without pay for each half-day spent in attendance at a recognised medical school and the appointment would be on a temporary basis in the first place pending completion of the course of study. The successful candidate will not be allowed to engage in private practice. The appointment will be subject to the appropriate superannuation provisions and to a satisfactory medical examination, and will be terminable by 3 months notice on either side. If the successful candidate possesses a car, consideration will be given to the payment of an allowance in accordance with the Corporation's scale.

Applications should be made on a form to be obtained from the Medical Officer of Health, Town Hall, Barnsley, and should be returned to him before 7th February, 1953.

A. E. GILFILLAN, Town Clerk.

Town Hall, Barnsley, 5th January, 1953.

COLOMBO PLAN. Applications are invited under the Colombo Plan Technical Coöperation Scheme for the post of BIOCHEMIST at the Lady Hardinge Medical College, New Delhi. Candidates should possess a postgraduate degree in biochemistry and 5 years teaching experience. The appointment is for 2 years. First-class return passage will be paid. Accommodation (or an allowance in lieu thereof) and free medical attention provided. Salary £1750–£2200 p.a. according to experience, plus a substantial tax-free overseas allowance.

Applicants should write, giving full particulars of experience and qualifications and the names of 2 referees, to the Secretary, Division 5A, Ministry of Health, Savile-row, W.1.

DERBYSHIRE COUNTY COUNCIL. County Health DEPARTMENT. Applications are invited from registered medical practitioners for the whole-time superannuable post of ASSISTANT SCHOOL AND ASSISTANT MATERNITY AND CHILD WELFARE MEDICAL OFFICER. Salary £850 p.a., by annual increments of £50 to £1150 p.a., plus a car allowance on the Council's scale.

Particulars and application forms are obtainable from Dr. J. B. S. MORGAN, County Medical Officer, County Offices, St. Mary's-gate, Derby.

MIDDLESEX COUNTY COUNCIL. Principal Medical OFFICER (whole-time) required, in County Health Department, 3, 5, and 7, Old Queen-street, S.W.1. Directly responsible to County Medical Officer for Mental Health Service, including community aftercare. Should have had special experience in mental health work whilst experience in other branches of the work of a health department with Degree or Diploma in Psychological Medicine an advantage. This post offers much scope to a practitioner with initiative and originality. Car allowance normally granted for this post. Established. Subject to medical assessment and prescribed conditions. Salary Whitley Council £1400–£50–£1800 p.a. inclusive. Approved service on similar grade may be taken into consideration in fixing commencing salary.

Apply in detail (no forms), names of 2 referees, to County Medical Officer (8) at above address (quoting L.579). Canvassing disqualifies.

C. W. RADCLIFFE, Clerk of the County Council.

HER MAJESTY'S COLONIAL SERVICE. Jamaica. MEDICAL OFFICERS OF HEALTH (Male or Female) required for general medical and public health duties in Jamaica. Appointment will be on 3 years probation for permanent and pensionable employment. Salary scale ranges from £1200 p.a. to £1500 p.a. Pension is earned at the rate of 1/600th of the final pensionable emoluments for each completed month of service. Normal retiring age is 60. Quarters are not provided. Free passages on appointment are provided for Officer, wife, and children under 18 years, not exceeding 5 persons in all, and on leave for Officer, wife, and up to 2 children only. Income-tax at local rates. Local leave is permissible and home leave on full pay is granted after each tour of 2 years duration. Climate is healthy for Europeans. Educational facilities are available. Candidates must possess qualifications registrable in the United Kingdom, and have obtained a Diploma in Public Health.

Application forms can be obtained from the Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith-street, London, S.W.1 (quoting reference No. CSE.60/32/02).

HER MAJESTY'S COLONIAL SERVICE. Barbados. A PATHOLOGIST is required for the Bacteriological and Pathological Department of Barbados, to assist the Government Bacteriologist and Pathologist in clinical pathological and medicolegal work. Appointment will be on a permanent basis with pension (non-contributory) at the age of 55. Salary scale is from $5280 to $6240 (£1100–£1300) p.a. Pension is earned at the rate of 1/600th of the final pensionable emoluments for each completed month of service. In addition a temporary (non-pensionable) cost-of-living allowance of $156 (£32 10s.) p.a. is payable. On appointment, free passages are provided for Officer and family up to a total cost of £300. Leave passages are provided for Officer and wife after the completion of a minimum tour of 3½ years. Income-tax at local rates. Climate is healthy for Europeans. Social and recreational amenities are good. Educational facilities are available. Candidates must possess medical qualifications registrable in the United Kingdom. They should also have a good knowledge of modern clinical pathology, especially for biochemistry as applied to clinical pathology.

Application forms can be obtained from the Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith-street, London, S.W.1 (quoting reference No. CDE.117/28/01).

HER MAJESTY'S COLONIAL SERVICE. Leprosy SERVICE IN NIGERIA. MEDICAL OFFICER required for the administration of preventive medical services and the clinical work of curative medicine in relation to leprosy. The selected Officer would not deal with leprosy only but would also have the general medical and surgical care of leprosy patients. He would be stationed at a Settlement with properly equipped hospital (with Nursing Sister) and laboratory. The work also includes the supervision of leprosy segregation villages and treatment centres within a radius of 100 miles; making epidemiological investigations; and teaching African Staff. Clinical research work is encouraged. The Officer will normally have professional colleagues and live in a European community. Appointment may be made as follows:—

(*a*) On 3 years probation for permanent and pensionable employment in the Colonial Medical Service; with retiring age of between 45 and 55. Pensions are at the rate of 1/600th of final pensionable emoluments for each completed month of reckonable service.

(*b*) From the National Health Service. Candidates may resign from the National Health Service but retain their superannuation rights during their time in Nigeria (up to 6 years) and receive a resettlement grant of 20% of the aggregate of their Colonial salary on leaving Nigeria at the end of their engagements, or

(*c*) on short-term contract with inclusive salary of from £1164 p.a., rising to £2150 p.a.; on completion of contract a gratuity is paid at the rate of £37 10s. for each completed period of 3 months service (including leave).

Officers appointed under (*a*) or (*c*) are required to contribute to a Widows' and Orphans' Pension Scheme. Salaries for officers appointed under (*a*) or (*b*) range from £1010 to £1850 p.a. Starting salary in all cases depends on age, experience, and war service. Quarters are provided at low rents. Free passages for Officer and his wife and assisted passages for up to 2 children under the age of 16. Income-tax at local rates. Normal tour of service is 18 months. Generous home leave. Candidates must hold medical qualifications registrable in the United Kingdom.

Application forms can be obtained from the Director of Recruitment (Colonial Service), Colonial Office, Sanctuary Buildings, Great Smith-street, London, S.W.1, (quoting reference CSE.60/14/01).

KENT EDUCATION COMMITTEE. Applications are invited for the appointment of ASSISTANT COUNTY MEDICAL OFFICER (Male or Female) in the North East Kent Area. The salary scale is £850 a year, with annual increments of £50 to £1150 a year. The commencing salary will be fixed at a point on the scale according to the experience and qualifications of the successful candidate. The appointment is superannuable and the successful candidate will be required to pass a medical examination. The duties are mainly in the School Health and Child Welfare Services and experience in the classification of educationally subnormal children will be an advantage.

Applications, stating age, qualifications, and experience, accompanied by the names and addresses of 2 persons to whom reference may be made as to professional ability and character, should be addressed to the County Medical Officer, County Hall, Maidstone, not later than 29th January, 1953.

A. ELLIOTT, M.D., School Medical Officer.

County Hall, Maidstone.

NORFOLK COUNTY COUNCIL. Applications are invited from registered medical practitioners holding the Diploma in Public Health for appointment as SENIOR MEDICAL OFFICER who will be responsible to the County Medical Officer for the mental health and school health services. Preference will be given to applicants who have had good experience of mental health, mental deficiency and school health service work. Salary scale £1250–£50–£1650 p.a., the commencing point to be fixed according to qualifications and experience.

Application forms together with further details can be obtained from the County Medical Officer, 29, Thorpe-road, Norwich, to whom completed application forms should be returned not later than 26th January, 1953.

LANCASHIRE COUNTY COUNCIL. Registered medical practitioners required as ASSISTANT DIVISIONAL MEDICAL OFFICERS in areas adjacent to Burnley, Bury, and Preston. Possession of D.P.H. desirable. Salary £850–£50–£1150 p.a. Travelling and subsistence allowance where applicable. Positions superannuable and subject to medical examination.

Application forms and further particulars from County Medical Officer of Health, East Cliff County Offices, Preston.

LONDON COUNTY COUNCIL. Psychiatrists required in Public Health Department to particularly advise on children in residential schools and homes. Remuneration £4 4s. a session of 1¼–2½ hours plus a mileage allowance.

Further particulars on form of application for return by 7th February, obtainable from the Medical Officer of Health (PH/D1), County Hall, S.E.1. (4.)

SWINDON. BOROUGH OF SWINDON. Applications are invited from duly qualified medical practitioners holding Diploma in Public Health or similar qualification for the appointment of DEPUTY to the Medical Officer of Health and Borough School Medical Officer who is also Area Medical Officer under the Wiltshire County Council. The salary and conditions of service will be in accordance with the award of the Industrial Court. The present salary is at the rate of £1034 p.a., rising by 4 increments of £50 to a maximum of £1234 p.a.

Forms of application and further particulars of the post may be obtained from the undersigned with whom applications should be lodged not later than Monday, 16th February, 1953.

D. MURRAY JOHN, Town Clerk.

Civic Offices, Swindon, Wilts, 9th January.

SURREY COUNTY COUNCIL. Applications are invited from registered medical practitioners for the permanent superannuable full-time appointment of ASSISTANT MEDICAL OFFICER. Applicants should possess a Diploma either in Public Health or Child Health. Main duties will be in connection with School Health and Maternity and Child Welfare Services, but Officer appointed will be required to undertake such other public health work as may be allocated to him by the County Medical Officer. Salary £850 p.a., rising by annual increments of £50 to £1150 p.a. The appointment will be subject to the successful candidate passing a medical examination, to the provisions of the Local Government Superannuation Act, 1937, as modified by the National Health Service superannuation regulations, and to the staffing regulations of the Council, which provide, inter alia, that appointments may be determined at any time by 3 months notice. Candidates should note that the Council can give no assistance in finding housing accommodation.

Applications, stating age, qualifications, and experience, together with a copy of 3 recent testimonials, and/or the names of 3 referees, should be made on the prescribed form and sent to the County Medical Officer, Kingston upon Thames, by 31st January, 1953. W. W. RUFF, Clerk of the Council.

WARWICKSHIRE COUNTY COUNCIL. County Medical OFFICER OF HEALTH'S DEPARTMENT. Applications are invited from registered medical practitioners for the permanent appointment of ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH (Male or Female). Preference will be given to those holding D.P.H. or D.C.H. and with previous experience. Salary according to experience within the scale £850 p.a. rising by annual increments of £50 to a maximum of £1150 p.a. The post is superannuable and appointment is subject to the production of a satisfactory medical certificate. The successful candidate will be required to provide and use a motor-car in the performance of his or her duties for which a mileage allowance is payable.

Further particulars (including details of area) and application forms may be obtained from the County Medical Officer of Health, Shire Hall, Warwick. Closing date for applications is 7th February, 1953. L. EDGAR STEPHENS, Clerk of the Council.

Shire Hall, Warwick, 5th January, 1953.

SUDAN GOVERNMENT. The Ministry of Health, Sudan Government, invites applications for the post of MALE OPHTHALMOLOGIST. Candidates should be in the Senior Registrar grade under the National Health Service, and should possess the qualifications of D.O.M.S. or should be aged 30–32 and possess the higher qualification plus considerable experience. Appointment will be on probation for short-term contract (with bonus) up to 6 years. Salary ranges from £E2000 to £E3000 (annual increases). Starting rate of pay is fixed according to age, qualifications, and experience of selected candidates. An outfit allowance of £E50 is payable when the contract is signed. No income-tax is at present payable in the Sudan. Free passage on appointment. Annual leave after the first tour. Candidates for this post may apply for secondment from the National Health Service for period of 3 years under the terms of circular letter No. RHB/(52)106 BG(52)101 of 30th September, 1952, in which case the contract with the Ministry of Health, Sudan Government, will be for that period.

Application forms may be obtained on application to Dr. E. P. PRATT, 93, Harley-street, London, W.1, quoting "Ophthalmologist" and name and address in block letters.

SUDAN GOVERNMENT. The Ministry of Health invites applications for posts of GYNÆCOLOGICAL SPECIALISTS. Candidates, who may be Male or Female, should be in the Senior Registrar grade under the National Health Services, and should possess the qualifications of M.R.C.O.G. or should be aged 30–32 and possess the higher qualifications plus considerable experience. Appointment will be on probation for short-term contract (with bonus) up to 6 years. Salary scale ranges from £E2000 to £E3000 (annual increases). Starting-rate of pay is fixed according to age, qualifications, and experience of selected candidates. An outfit allowance of £E50 is payable when the contract is signed. No income-tax is at present payable in the Sudan. Free passage on appointment. Annual leave after the first tour. Candidates for this post may apply for secondment from the National Health Service for period of 3 years under the terms of circular letter No. RHB/(52) 106 BG(52) 101 of 30th September, 1952, in which case the contract with the Ministry of Health, Sudan Government, will be for that period.

Further particulars and application forms may be obtained on application to the Sudan Agent in London, Wellington House, Buckingham-gate, London, S.W.1. Please mark the envelope "Specialist 1211."

PERSIAN GULF. Chief Quarantine Medical Officer required by Foreign Office for Persian Gulf to supervise quarantine services, general advice and help to health services and medical care of Staff of Political Residency and their families. Male candidates only, preferably single, must be medically qualified and experienced. Salary £1000 p.a. (taxable), plus Foreign Service allowance £1200 p.a. for single men (untaxable). Free furnished accommodation.

Written applications, quoting date of birth, education, and nationality, qualifications, and experience, to Appointments Office, Ministry of Labour and National Service, 1–6, Tavistock-square, London, W.C.1, quoting reference E.F.1310 by 24th January, 1953. In no circumstances should original testimonials be forwarded.

General Practice

For an Executive Council post apply on form E.C.16A obtainable from the council. Mark envelope "Vacancy."

BIRSTALL, near LEEDS. Applications are invited for VACANCY arising at Birstall, an Urban area in the Borough of Batley. List at present approximately 1890. Residence and surgery available for purchase. Apply on Form E.C.16A to the undersigned not later than 28th January, 1953.

C. H. STABLER, Clerk,
West Riding of Yorkshire Executive Council.

5, St. John's North, Wakefield.

KENT AND CANTERBURY EXECUTIVE COUNCIL. VACANCY. Applications are invited from registered medical practitioners to fill a Vacancy which arises on a housing estate in an urban area which is classed as designated. There is no list of patients but a house designed for use by a doctor is in the course of erection and is expected to be completed shortly. The house will be let on a yearly tenancy at a rent of £160 p.a. exclusive of rates, the Urban District Council carrying out all repairs. Applications on Form E.C.16A should be submitted to the undersigned not later than 31st January, 1953.

W. HEWETSON, Clerk,
Kent and Canterbury Executive Council.

11, Station-road, Maidstone.

LLANDRINDOD WELLS, RADNORSHIRE. Applications invited for VACANCY mixed Urban and Rural. List about 2320. Residence and surgery not available but it is not anticipated that difficulty would be experienced in obtaining accommodation. Applications on Form E.C.16A to reach the undersigned on or before 31st January, 1953.

EDMUND A. PEARMAIN,
Clerk of the Radnorshire Executive Council.

County Hall, Llandrindod Wells.

LIFTON AND LEWDOWN, DEVON. Applications are invited for VACANCY (rural and dispensing) due to resignations. List approximately 2400. Practice at present administered by 2 partners. Residence and surgery available for purchase. Apply on Form E.C.16A to the undersigned not later than 31st January, 1953.

H. BELL, Clerk, Devon and Exeter Executive Council.

46, Queen-street, Exeter.

Hospital Services : Non-Medical Appointments

SOUTH WORCESTERSHIRE HOSPITAL MANAGE-MENT COMMITTEE invite applications for the post of BIOCHEMIST in the Group Pathological Department at Worcester Royal Infirmary, vacant on 1st April, 1953. Principal or Senior Grade according to qualifications and status.

Applications, giving the names of 3 referees, to be sent not later than 9th February, 1953, to the Secretary.

Miscellaneous

Where non-professional posts the Notification of Vacancies Order 1952 applies

Required, experienced Secretary, over 25 years old, for 3 doctors practising Sunningdale. Good salary offered.—Apply: Address, No. 777, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Physician retiring. House and fittings available. Suitable consultant. N.W. suburb, 9 miles Harley-street.—Address, No. 779, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

To Let. Unfurnished maisonette, 6 rooms, best part Kensington, suit family with children school age. £350.—Address, No. 776, THE LANCET Office, 7, Adam-street, Adelphi, London, W.C.2.

Applicants for posts requiring testimonials copied or duplicated should communicate with MANTON SECRETARIAL SERVICE, LTD., 98, Victoria-street, S.W.1 (Phone: VICtoria 0141), who are specialists in this kind of work.

"Pregnancy Diagnosis by the Xenopus Method." 24-hour service.—Send specimen of urine and £1 1s. fee to: WELBECK BIOLOGICAL LABORATORIES, 26, Park-crescent, Portland-place, W.1 (Telephone: MUSeum 5386–7).

Austin A.30 Seven and A.40 Range. A limited number of orders now acceptable from proven essential users for delivery ahead. Brochures from Austin House, 140/144, Golders Green-road, London, N.W.11.

1936 Rolls Royce 30 h.p. O./D. Saloon with division; coachwork by Park Ward. In immaculate condition throughout: recent overhaul by Rolls Royce costing £500; new tyres throughout; colour black/brown hide.—Phone (LANgham 4343) or write: Mr. SMELLIE, 28, Aybrook-street, London, W.1.

Hypnotism. Will all Doctors interested in this subject for Medical purposes please write to the Secretary, British Society of Medical Hypnotists, 48, Wick Hall, Hove, 2, Sussex.

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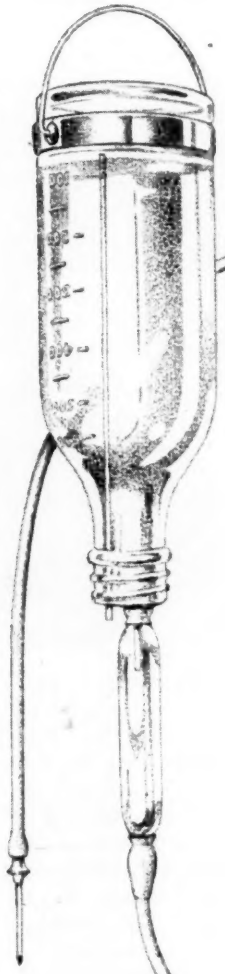

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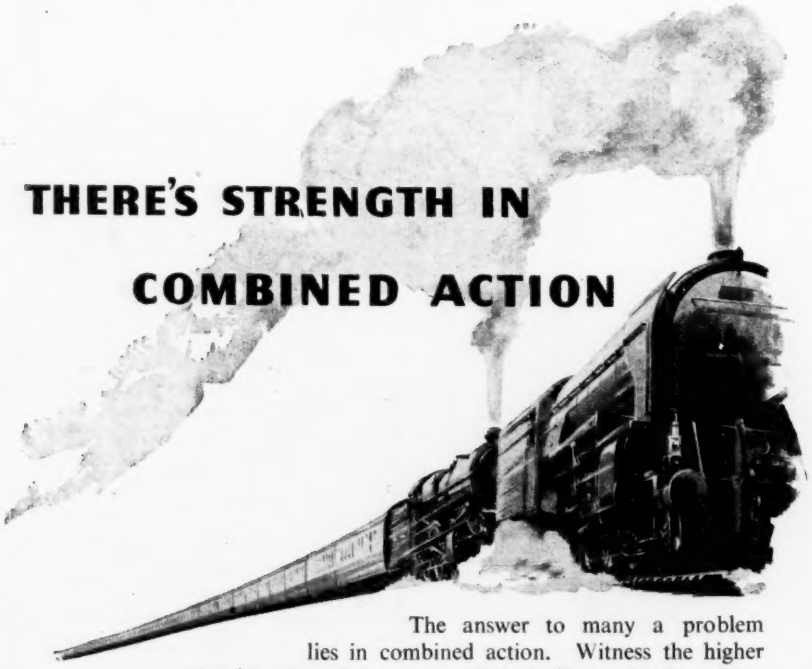

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